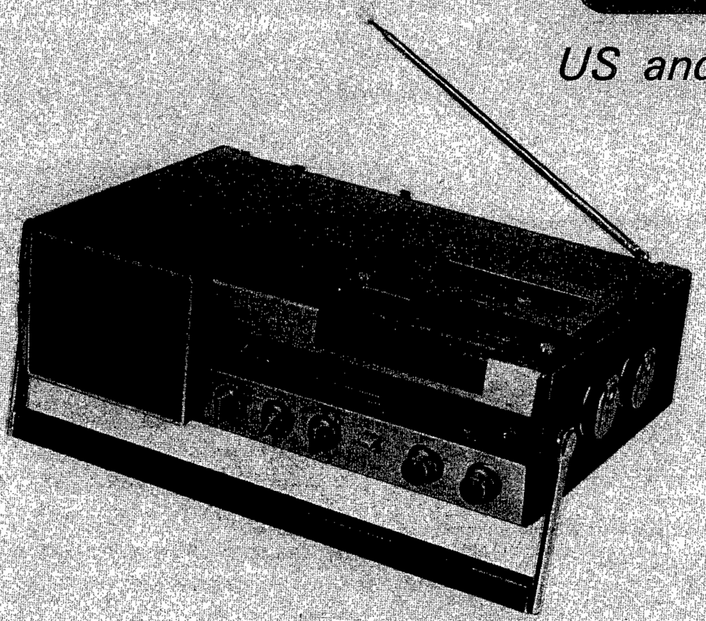
# FX-412

# AC-121W

*US and Canadian Model*



# TV-FM/AM RECEIVER CASSETTE-CORDER

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DU CIRCUIT QUI SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT SONT IDENTIFIÉS DANS CE MANUEL. SUIVRE LES PROCÉDURES QUAND LES COMPOSANTS CRITIQUES SONT REMPLACÉS OU LE FONCTIONNEMENT IMPROPRE EST SUSPECTÉ.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SONY®

# SERVICE MANUAL

## SPECIFICATIONS

**Television System:** American TV standards

**Picture Tube:** 9.4 cm, 4" (screen measured diagonally), 50° deflection

**Semiconductors:** 57 transistors, 43 diodes and 1 IC

**Antennas:** VHF/UHF: Built-in telescopic antenna with external antenna terminal (75 Ω unbalanced)

**Channel Coverage:** VHF channels: 2 – 13
UHF channels: 14 – 83

**Intermediate Frequencies:** Picture i-f carrier: 45.75 MHz
Sound i-f carrier: 41.25 MHz

**Sound System:** 4.5 MHz intercarrier
Output power: 2,000 mW (max.)
Speaker: 10 cm (4 inches) dia., 4 Ω

**Input:** MIC (minijack) . . . . . . . 1
Sensitivity 0.2 mV (–72 dB) for low-impedance microphone

**Output:** EARPHONE (minijack) . . . . . . . 1
for 8 Ω earphone or loard impedance 10 kΩ or higher

0 dB = 0.775 V

**Other Jack:** REMOTE control jack

**Automatic Controls:** AFC (automatic frequency control)
AGC (automatic gain control)

**Anode Voltage:** 7 kV at zero beam current

**Power Requirements:** 120 V ac, 60 Hz, with AC-121W ac power adaptor
9 V dc, 6 batteries size D (IEC Designation R20)
12 V car battery with optional Sony car battery cord DCC-16W

**Power Consumption:** 14.5 W ac
9 W dc (in 12 V operation)

**Dimensions:** Approx. 315 (w) x 94 (h) x 222 (d) mm
12 ½ (w) x 3 ¾ (h) x 8 ¾ (d) inches
including projecting parts and controls, excluding handle or hood without batteries

**Net Weight:** Approx. 3 kg (6 lb 10 oz)

### Battery Life

Battery life is dependent on operating conditions and the type of batteries used. The following table shows some example; the upper row shows the battery life with an intermittent use of two-hours on and two-hours off, and the lower shows that with continuous use.

| | Eveready No. 1050 | Eveready Heavy Duty No. 1250 | Eveready alkaline No. E95 |
|---|---|---|---|
| TV viewing | 11 hours<br>8 hours | 16 hours<br>16 hours | 33 hours<br>24 hours |
| TV recording while viewing TV | 7 hours<br>5 hours | 10 hours<br>10 hours | 21 hours<br>15 hours |

### RADIO SECTION

**Frequency Range:** FM: 87.5 – 108 MHz
AM: 530 – 1,605 kHz

**Antennas:** FM: Built-in telescopic antenna with external antenna terminal (75 Ω unbalanced)
AM: Built-in ferrite-rod antenna

### TAPE RECORDER SECTION

**Recording System:** 2-track 1-channel monaural

**Fast Winding Time:** Approx. 1 min, 50 sec. with Sony Cassette C-60

**Accessories Supplied:** Earphone (ME-20H)
Cassette tape
AC power adaptor (AC-121W)
Shorting plug (SP-100)
Head cleaning tips
Hood
Instruction manual

# SAFETY CHECK-OUT
# (US model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
   Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

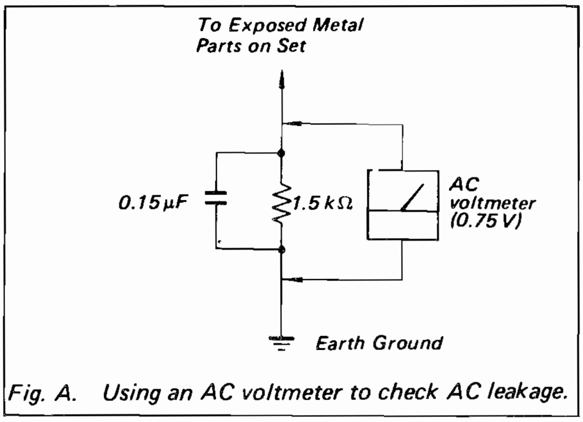


*Fig. A. Using an AC voltmeter to check AC leakage.*

## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

## HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

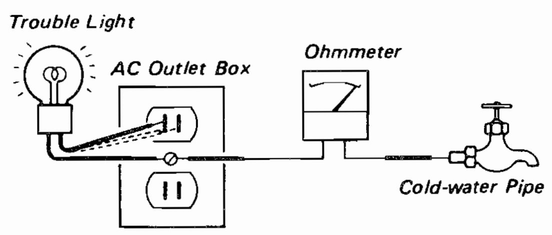
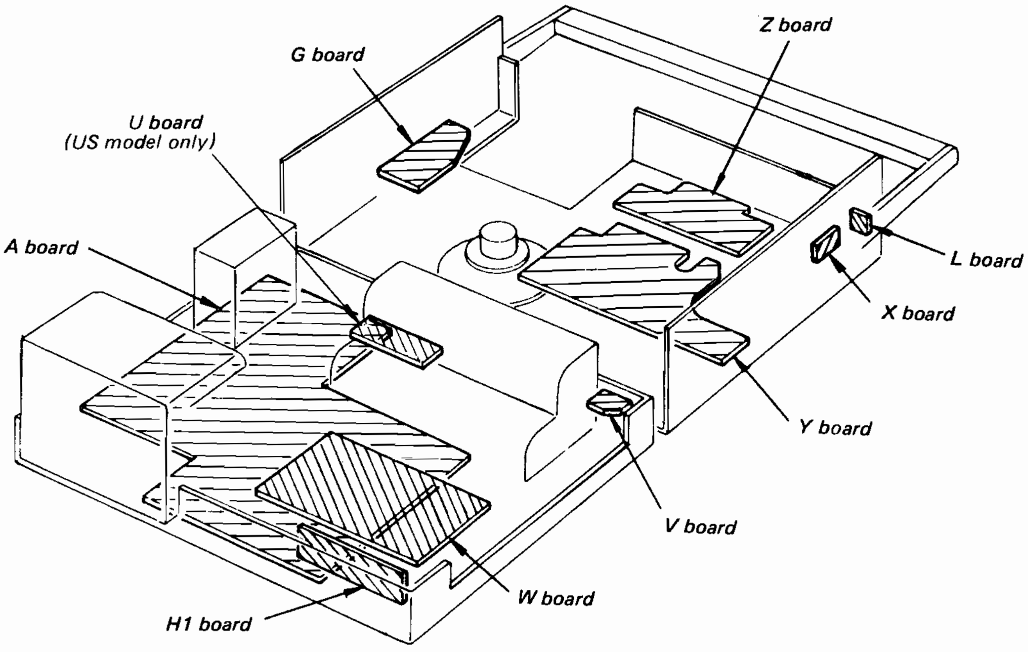
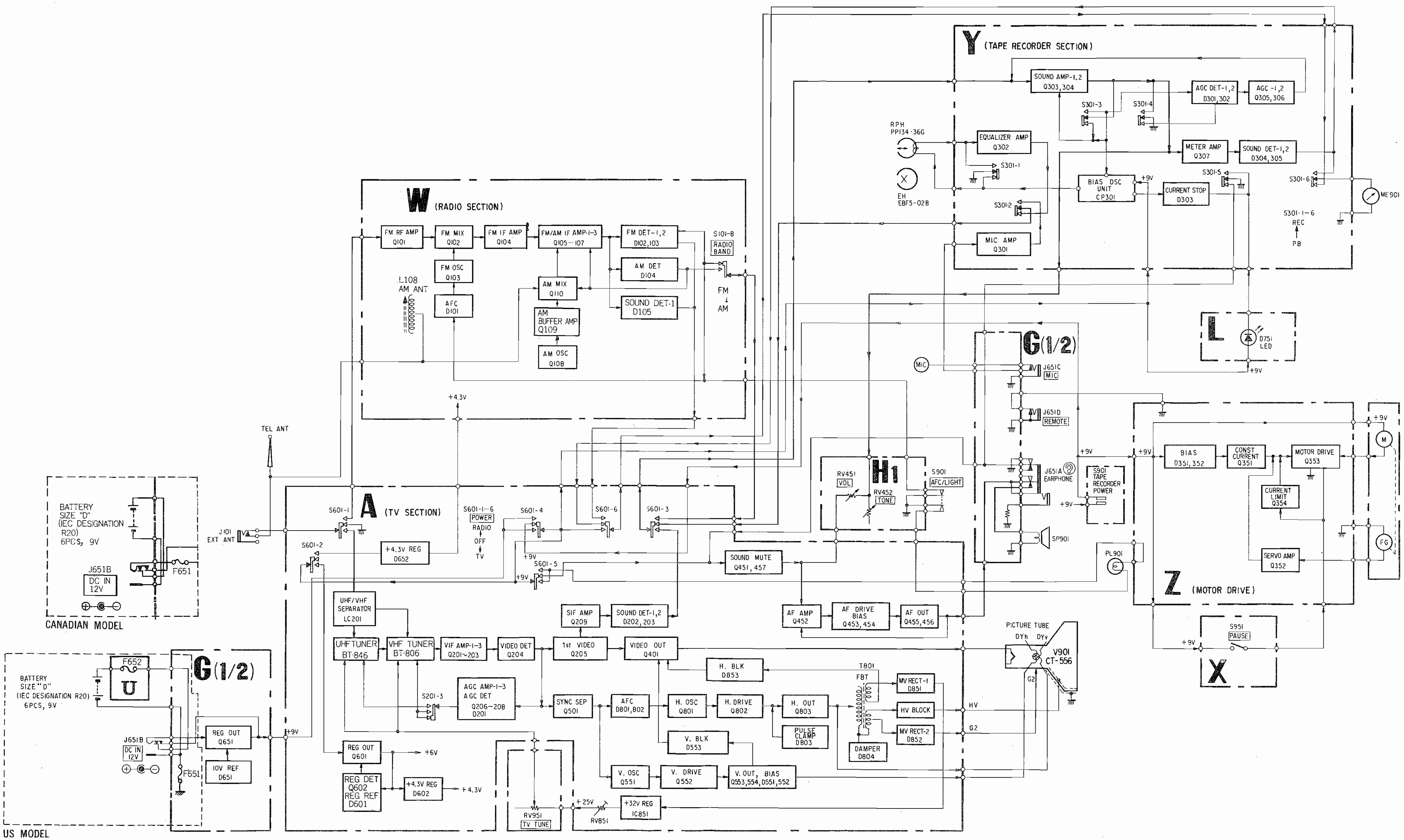


*Fig. B. Checking for earth ground.*

## CIRCUIT BOARD LOCATIONS


Z board
G board
U board
(US model only)
A board
L board
X board
Y board
V board
W board
H1 board

# SECTION 1
# BLOCK DIAGRAM

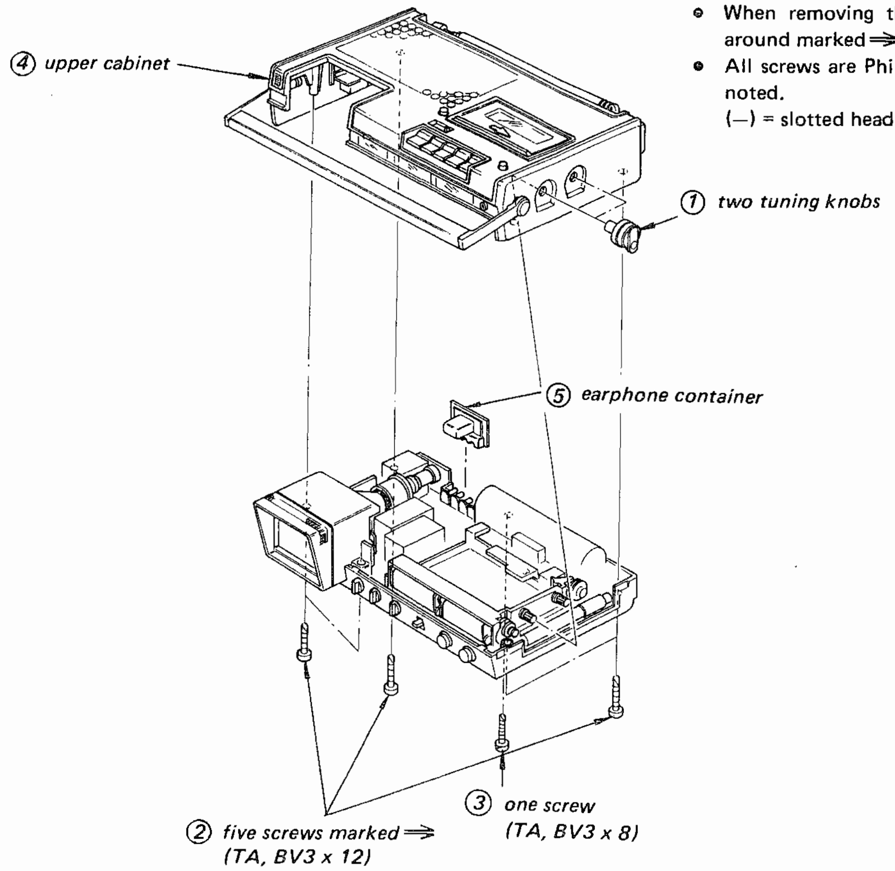

Y (TAPE RECORDER SECTION)
SOUND AMP-1,2 Q303,304
AGC DET-1,2 D301,302
AGC-1,2 Q305,306
S301-3
S301-4
EQUALIZER AMP Q302
METER AMP Q307
SOUND DET-1,2 D304,305
RPH PP134-366
S301-1
EH EBF5-02B
BIAS OSC UNIT CP301
+9V
S301-5
CURRENT STOP D303
S301-6
ME901
S301-2
MIC AMP Q301
S301-1~6 REC PB
W (RADIO SECTION)
FM RF AMP Q101
FM MIX Q102
FM IF AMP Q104
FM/AM IF AMP-1~3 Q105~107
FM DET-1,2 D102,103
S101-8 RADIO BAND
FM OSC Q103
AM DET D104
L108 AM ANT
AM MIX Q110
FM AM
AFC D101
AM BUFFER AMP Q109
SOUND DET-1 D105
AM OSC Q108
+4.3V
L D751 LED +9V
G(1/2)
MIC
J651C MIC
J651D REMOTE
J651A EARPHONE
S901 TAPE RECORDER POWER
+9V
SP901
TEL ANT
H1
RV451 VOL
RV452 TONE
S901 AFC/LIGHT
Z (MOTOR DRIVE)
+9V
BIAS D351,352
CONST CURRENT Q351
MOTOR DRIVE Q353
M
CURRENT LIMIT Q354
FG
SERVO AMP Q352
PL901
X S951 PAUSE +9V
BATTERY SIZE "D" (IEC DESIGNATION R20) 6PCS, 9V
J651B DC IN 12V
F651
CANADIAN MODEL
J101 EXT ANT
A (TV SECTION)
S601-1
S601-1~6 POWER RADIO OFF TV
S601-4
S601-6
S601-3
S601-2
+4.3V REG D652
+9V
S601-5
SOUND MUTE Q451,457
AF AMP Q452
AF DRIVE BIAS Q453,454
AF OUT Q455,456
UHF/VHF SEPARATOR LC201
SIF AMP Q209
SOUND DET-1,2 D202,203
PICTURE TUBE DYh DYv
V901 CT-556
G2
UHF TUNER BT-846
VHF TUNER BT-806
VIF AMP-1~3 Q201~203
VIDEO DET Q204
1st VIDEO Q205
VIDEO OUT Q401
H. BLK D853
T801 FBT
MV RECT-1 D851
AGC AMP-1~3 AGC DET Q206~208 D201
S201-3
SYNC SEP Q501
AFC D801,802
H. OSC Q801
H. DRIVE Q802
H. OUT Q803
HV BLOCK
HV
MV RECT-2 D852
G2
PULSE CLAMP D803
DAMPER D804
V. BLK D553
BATTERY SIZE "D" (IEC DESIGNATION R20) 6PCS, 9V
F652
U
G(1/2)
J651B DC IN 12V
F651
REG OUT Q651
10V REF D651
+9V
REG OUT Q601
+6V
REG DET Q602 REG REF D601
+4.3V REG D602
+4.3V
V. OSC Q551
V. DRIVE Q552
V. OUT, BIAS Q553,554,D551,552
+25V
RV851
+32V REG IC851
RV951 TV TUNE
US MODEL

# SECTION 2
# DISASSEMBLY

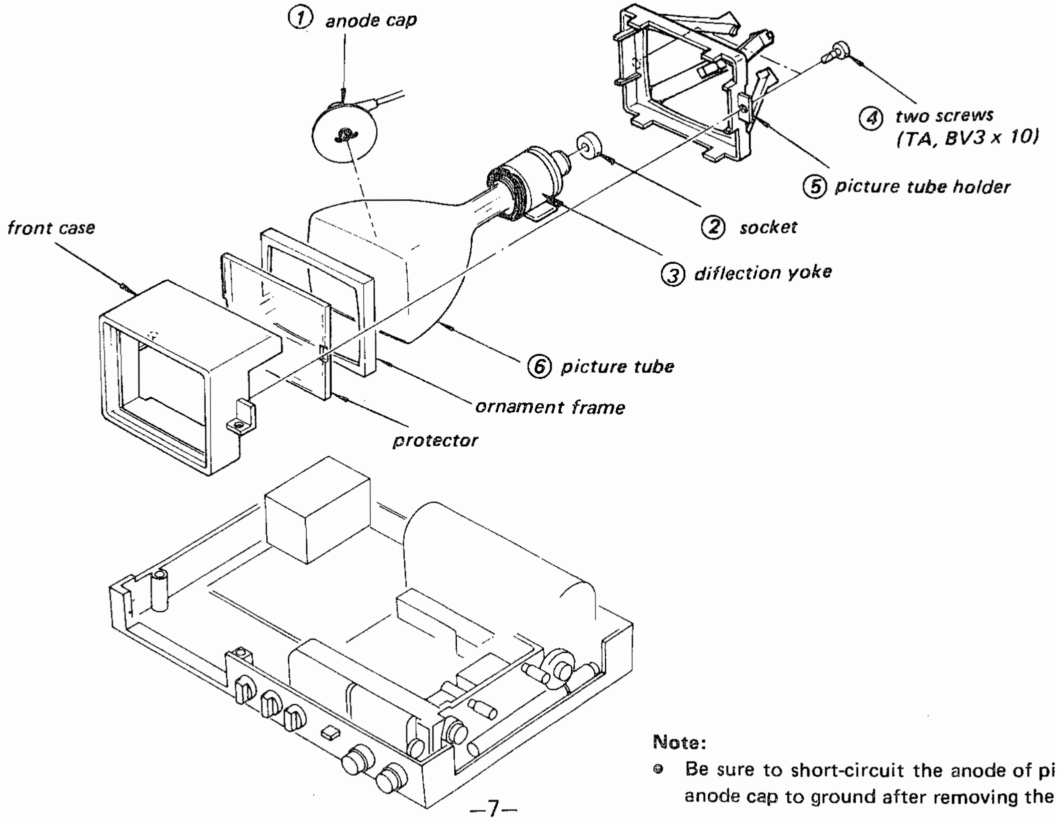
**Note:**

- Follow the disassembly procedure in the numerical order given.
- When removing the rear cover, take out all the screws around marked ⇛ on it.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

## 2-1. UPPER CABINET REMOVAL


④ upper cabinet
① two tuning knobs
⑤ earphone container
③ one screw
(TA, BV3 x 8)
② five screws marked ⇛
(TA, BV3 x 12)

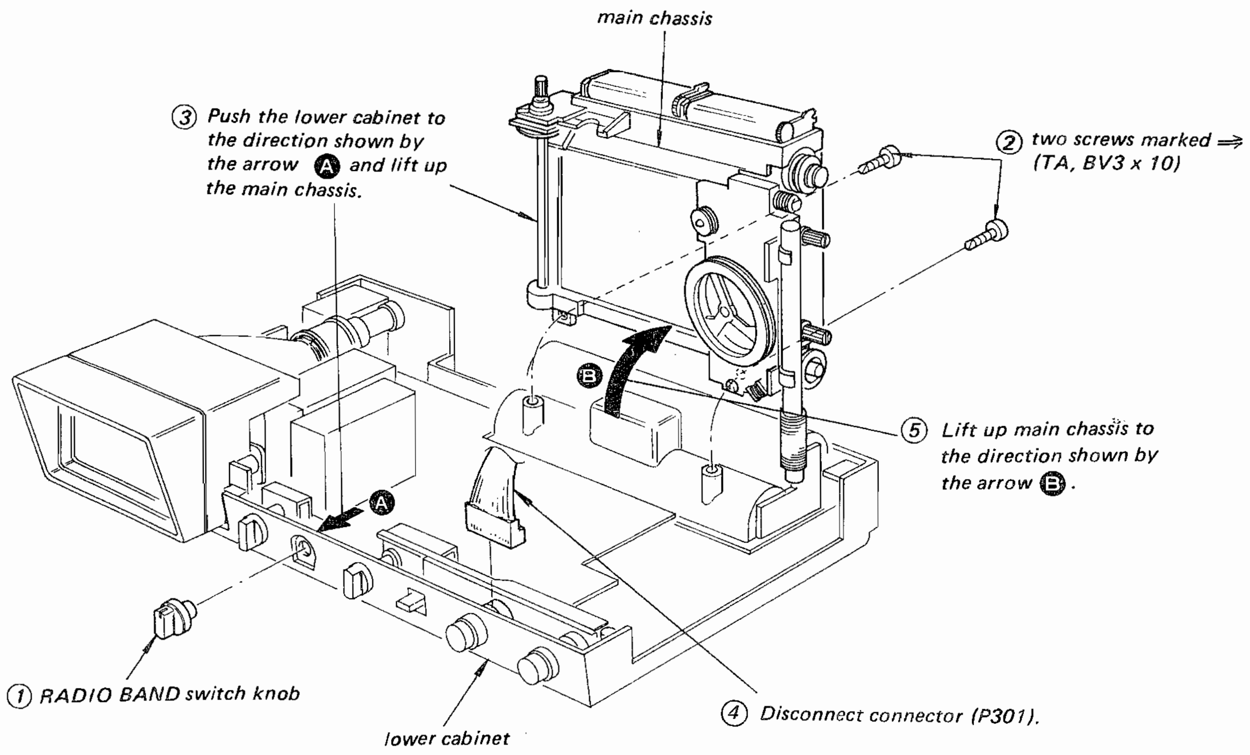
## 2-2. PICTURE TUBE REMOVAL


① anode cap
④ two screws
(TA, BV3 x 10)
⑤ picture tube holder
front case
② socket
③ diflection yoke
⑥ picture tube
ornament frame
protector

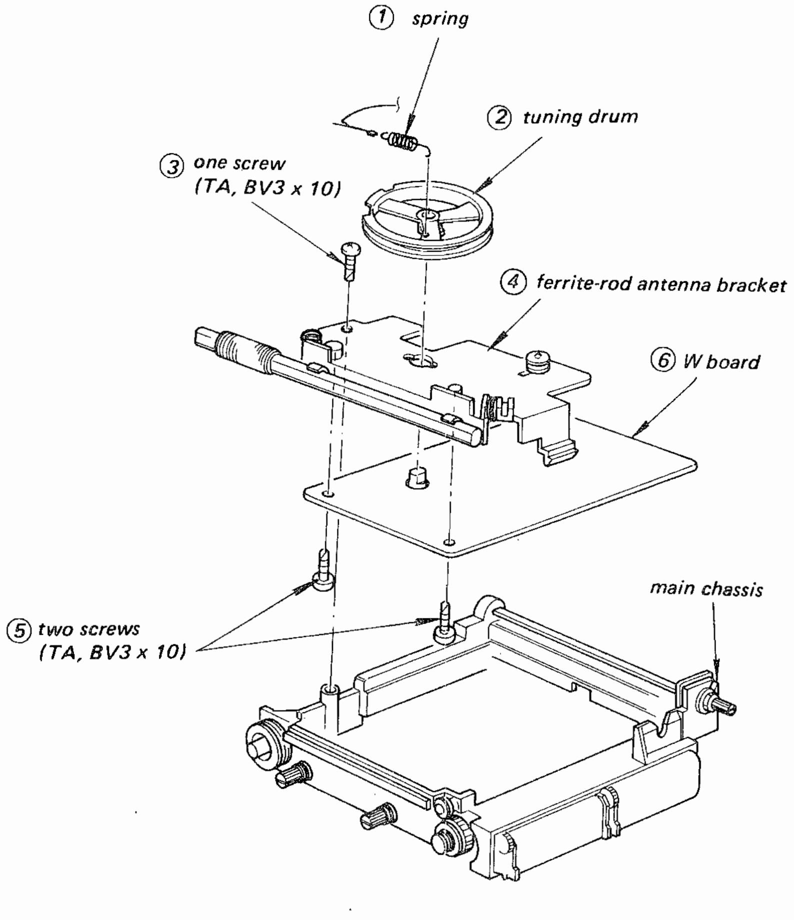
**Note:**

- Be sure to short-circuit the anode of picture tube and the anode cap to ground after removing the anode cap.

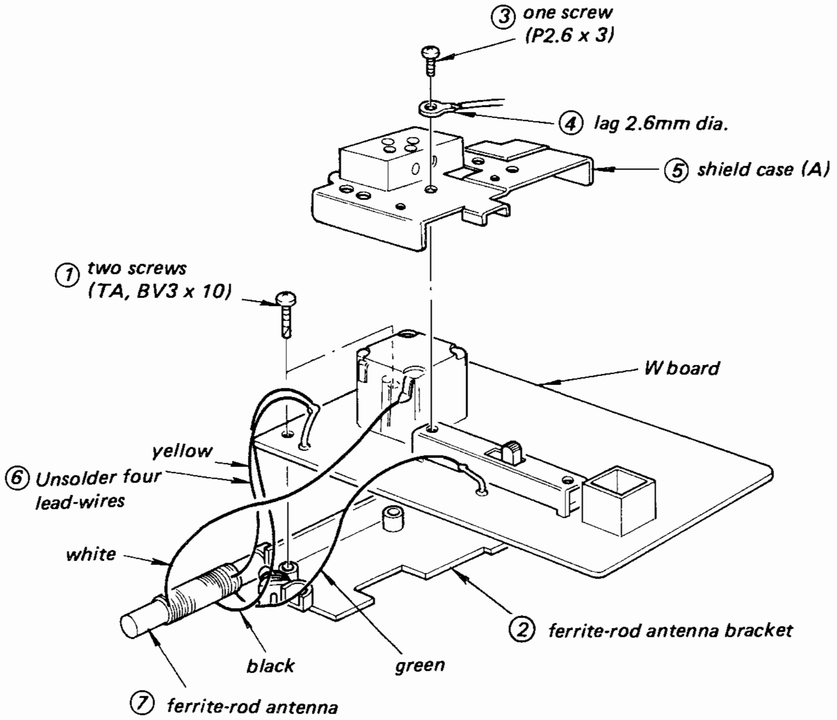
## 2-3. MAIN CHASSIS REMOVAL


main chassis
③ Push the lower cabinet to the direction shown by the arrow Ⓐ and lift up the main chassis.
② two screws marked ⇛
(TA, BV3 x 10)
Ⓑ
Ⓐ
⑤ Lift up main chassis to the direction shown by the arrow Ⓑ.
① RADIO BAND switch knob
lower cabinet
④ Disconnect connector (P301).

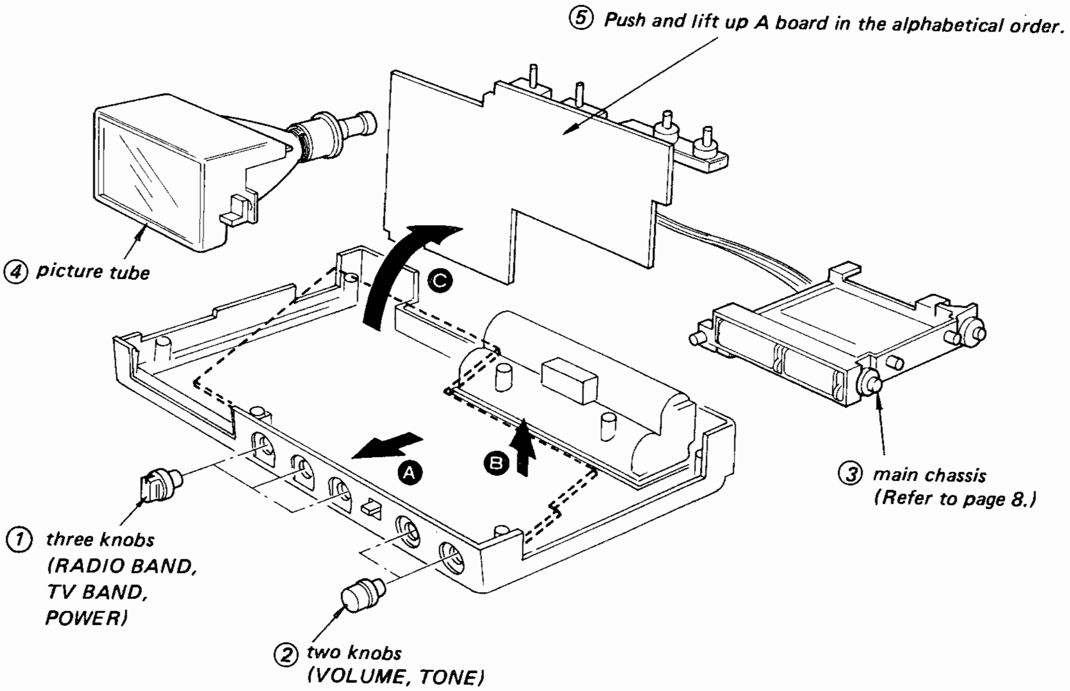
## 2-4. W BOARD REMOVAL


① spring
② tuning drum
③ one screw
(TA, BV3 x 10)
④ ferrite-rod antenna bracket
⑥ W board
main chassis
⑤ two screws
(TA, BV3 x 10)

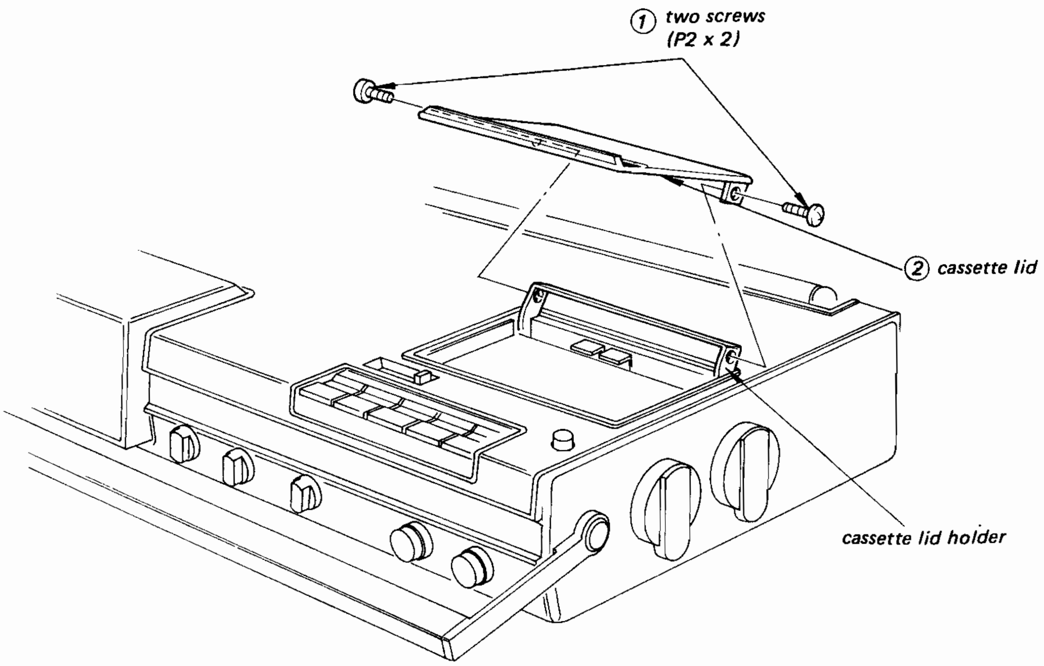
## 2-5. FERRITE-ROD ANTENNA REMOVAL


③ one screw (P2.6 x 3)
④ lag 2.6mm dia.
⑤ shield case (A)
① two screws (TA, BV3 x 10)
W board
yellow
⑥ Unsolder four lead-wires
white
② ferrite-rod antenna bracket
black
green
⑦ ferrite-rod antenna

## 2-6. A BOARD REMOVAL (FOR CHECKING IT UP)

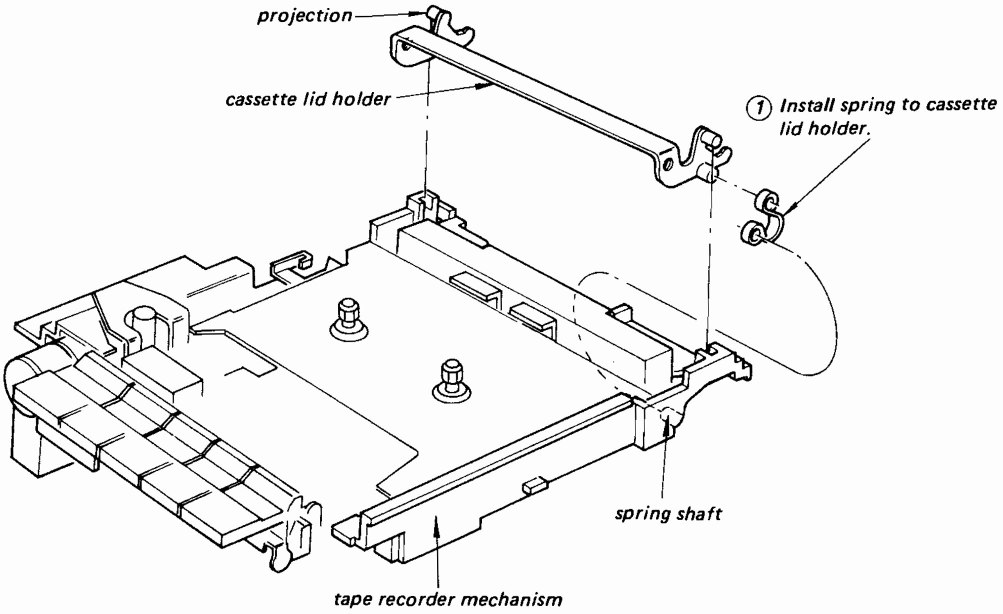

⑤ Push and lift up A board in the alphabetical order.
④ picture tube
C
A
B
③ main chassis (Refer to page 8.)
① three knobs (RADIO BAND, TV BAND, POWER)
② two knobs (VOLUME, TONE)

## 2-7. CASSETTE LID REMOVAL

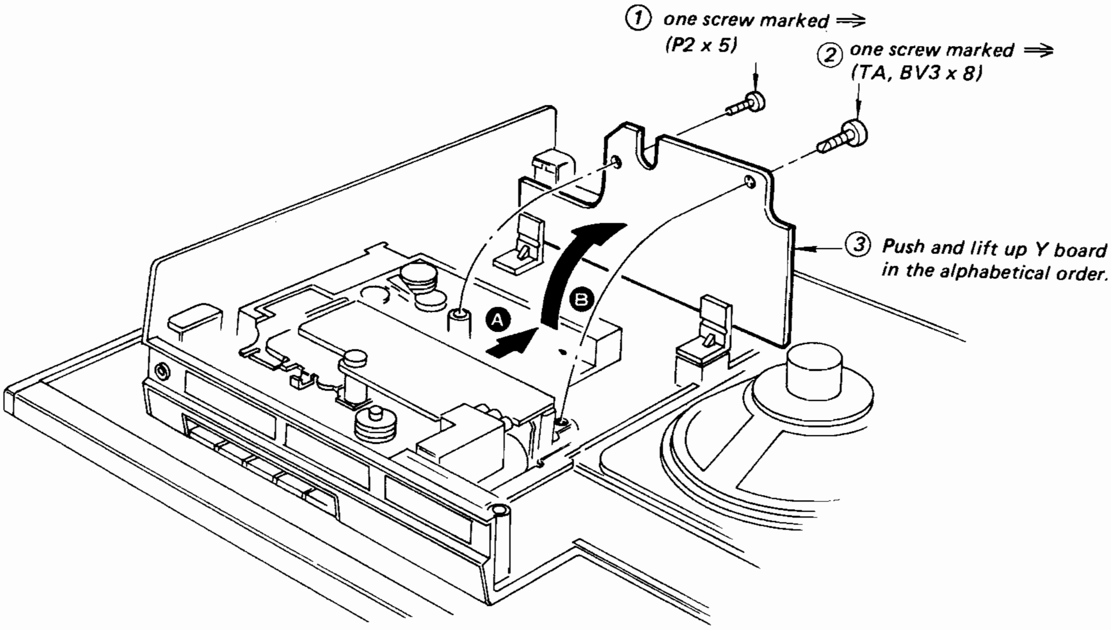

① two screws (P2 x 2)
② cassette lid
cassette lid holder

## 2-8. CASSETTE LID HOLDER INSTALLATION

② *Install spring to spring shaft and put projection of cassette lid holder in hole of tape recorder mechanism.*

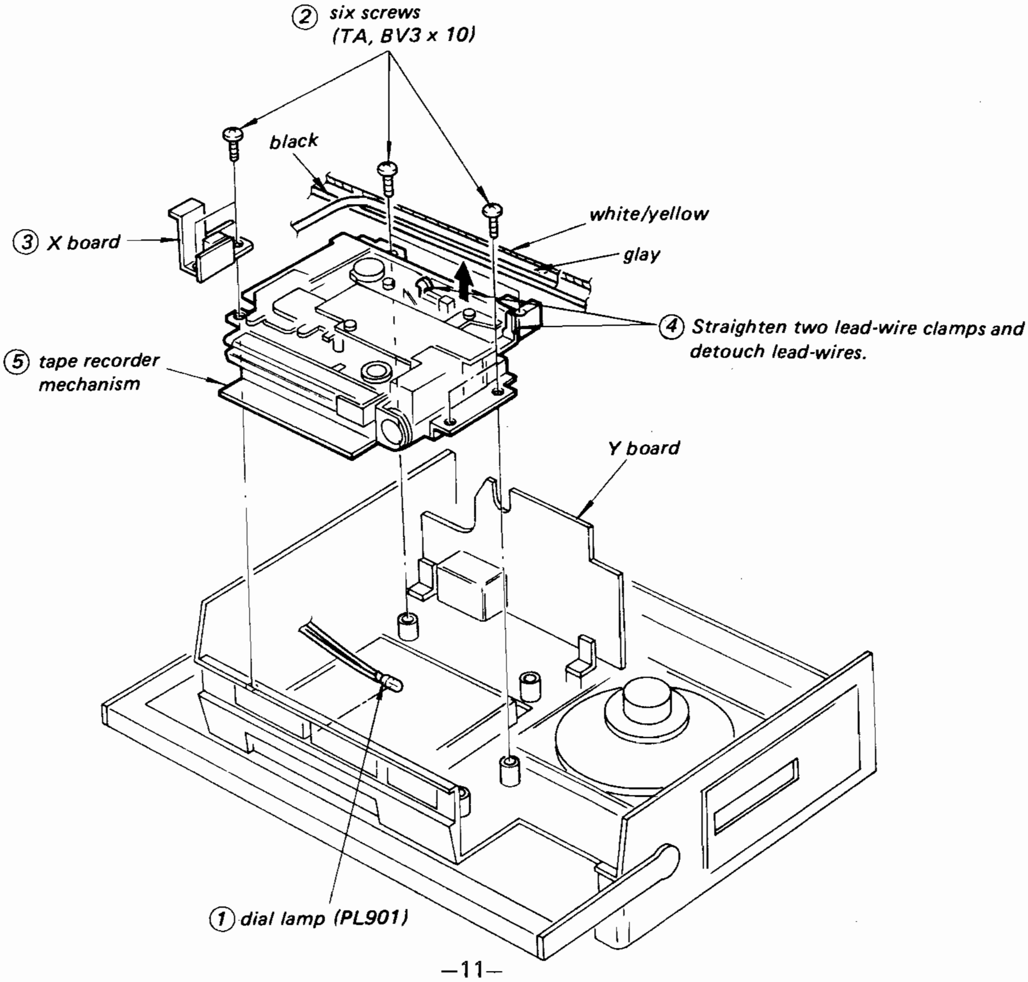

projection
cassette lid holder
① Install spring to cassette lid holder.
spring shaft
tape recorder mechanism

## 2-9 Y BOARD REMOVAL (FOR CHECKING IT UP)

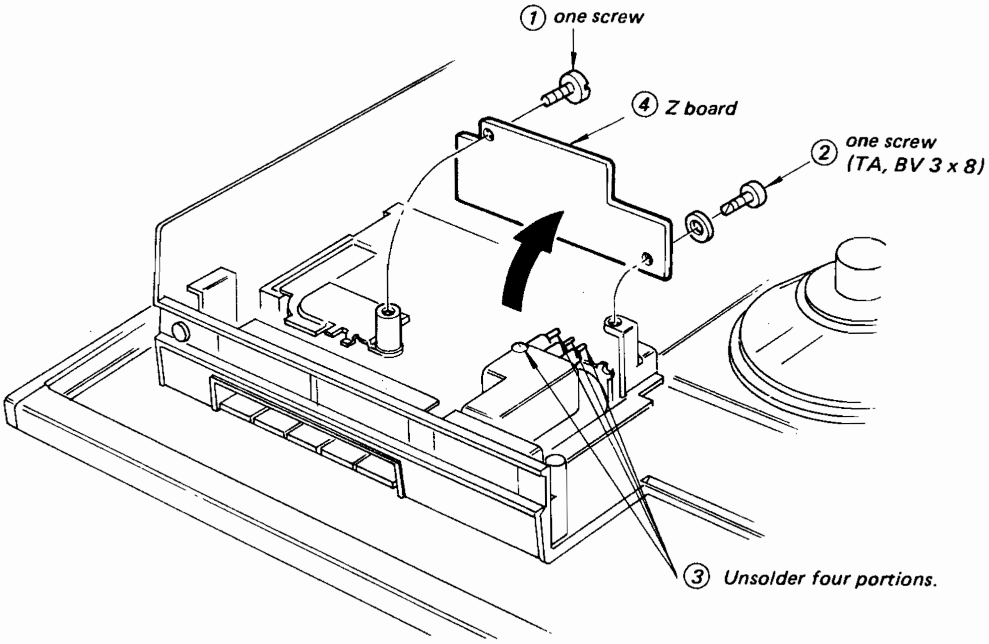

① one screw marked ⇛
(P2 x 5)
② one screw marked ⇛
(TA, BV3 x 8)
③ Push and lift up Y board
in the alphabetical order.
A
B

## 2-10. TAPE RECORDER MECHANISM REMOVAL

**Note:** Perform this removal after cassette lid removal (page 10) and Y board removal.

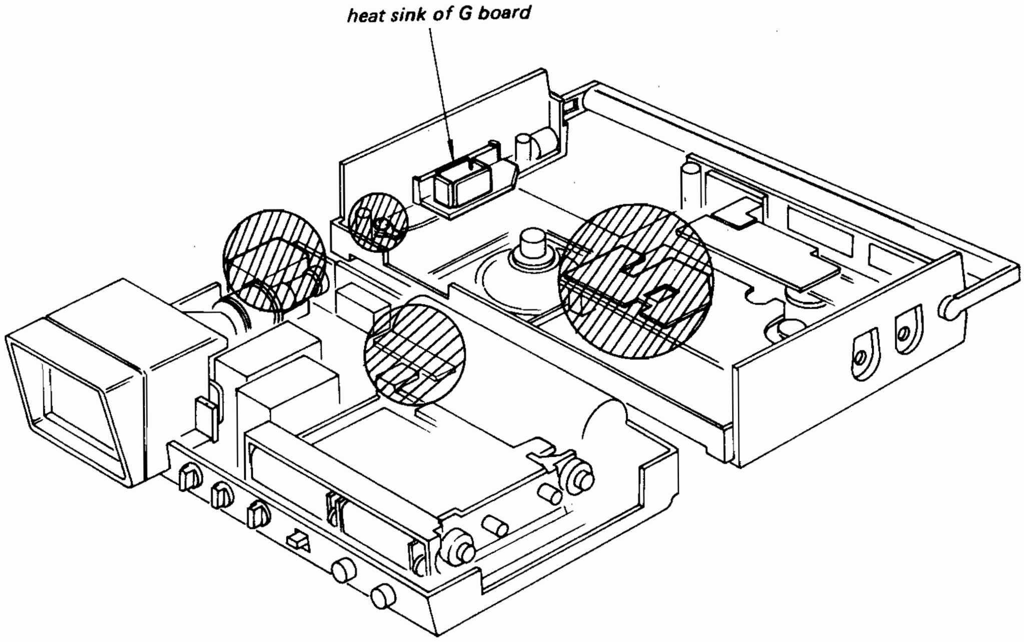

② six screws
(TA, BV3 x 10)
black
white/yellow
glay
③ X board
④ Straighten two lead-wire clamps and
detouch lead-wires.
⑤ tape recorder
mechanism
Y board
① dial lamp (PL901)

## 2-11. Z BOARD REMOVAL (FOR CHECKING IT UP)


① one screw
④ Z board
② one screw (TA, BV 3 x 8)
③ Unsolder four portions.

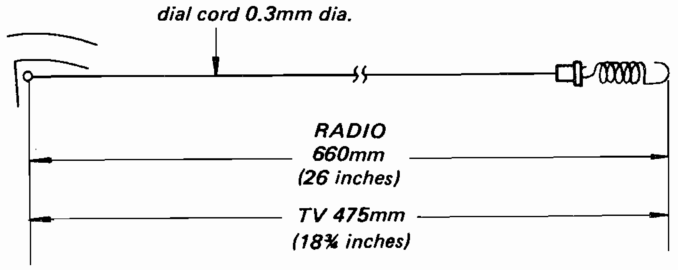
## 2-12. CAUTION ON REPAIRING

*When reparing the set with battery installed or with DC power cord plugged, take care not to touch the ground portions marked ▨ with the heat sink of G board.*

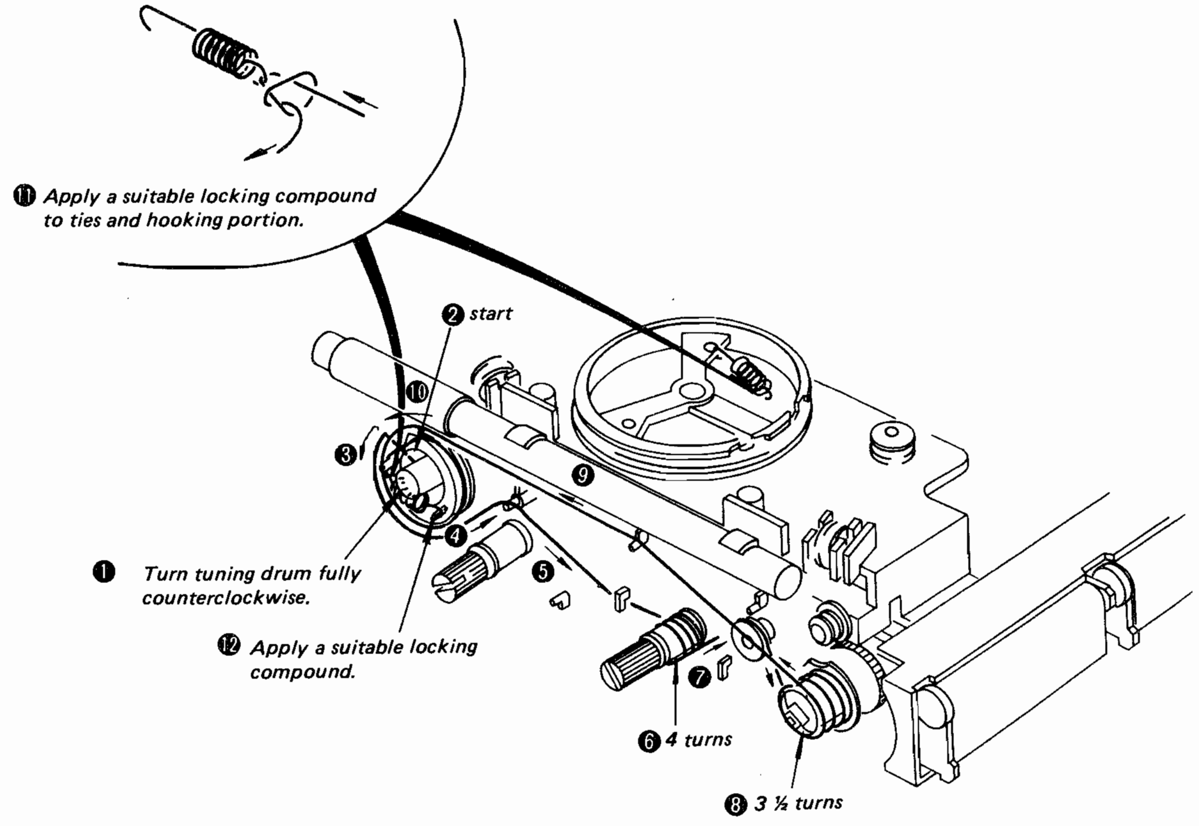

heat sink of G board

## 2-13. DIAL CORD STRINGING

### (1) Preparation


dial cord 0.3mm dia.
RADIO
660mm
(26 inches)
TV 475mm
(18¾ inches)

### (2) TV Dial Cord Stringing


⓫ *Apply a suitable locking compound to ties and hooking portion.*

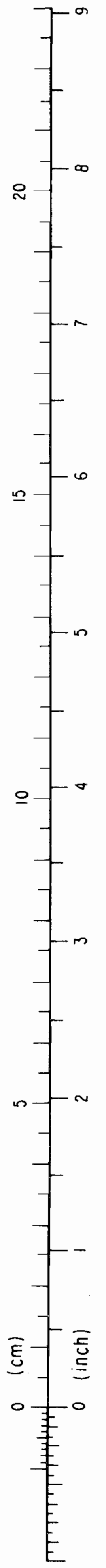
❶ *Turn tuning drum fully counterclockwise.*

❷ *start*

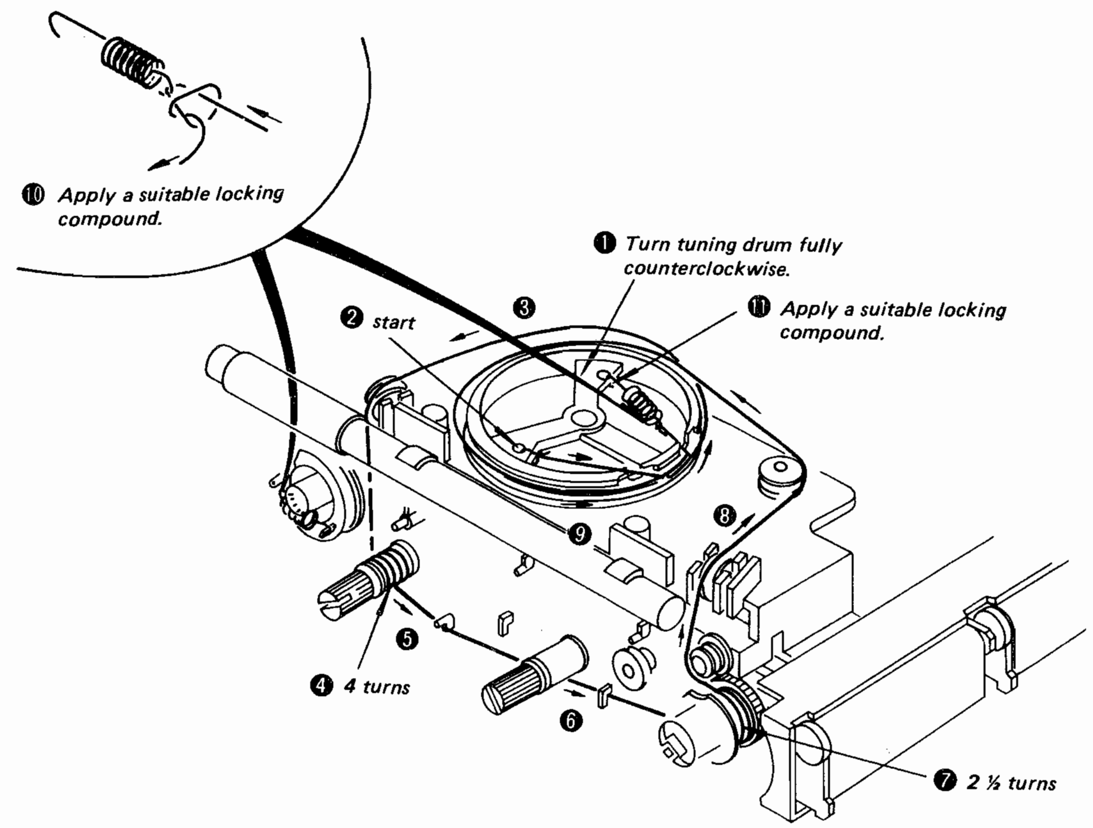
⓬ *Apply a suitable locking compound.*

❻ *4 turns*

❽ *3 ½ turns*


20
15
10
5
0 (cm)
9
8
7
6
5
4
3
2
1
0 (inch)

### (3) RADIO Dial Cord Stringing


❿ *Apply a suitable locking compound.*

❶ *Turn tuning drum fully counterclockwise.*

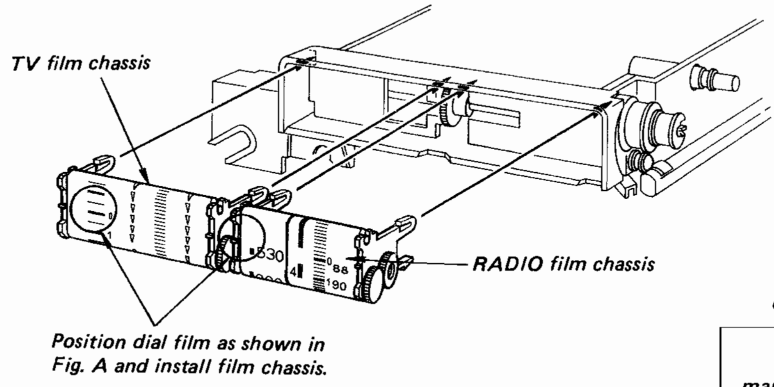
⓫ *Apply a suitable locking compound.*

❷ *start*

❹ *4 turns*

❼ *2 ½ turns*

### (4) Film Chassis Setting


TV film chassis
RADIO film chassis

*Position dial film as shown in Fig. A and install film chassis.*

*dial film setting*

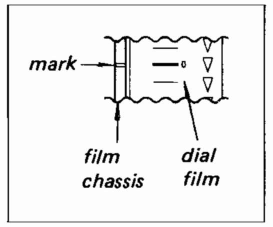

mark
film chassis
dial film

*Fig. A*

## MEMO

# SECTION 3
# ADJUSTMENTS

## 3-1. TAPE RECORDER SECTION

**PRECAUTION**

1. Clean the following parts with a denatured-alcohol-moistened swab:

| | |
|---|---|
| record/playback head | pinch roller |
| erase head | rubber belts |
| capstan | |

2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply a suitable locking compound to the parts adjusted.
5. These adjustments should be performed with 12V dc supplied to DC IN 12V jack, unless otherwise specified.

**Note:** Test Equipment Required
1. VTVM
2. Regulated DC Power Supply
3. Dc Ammeter
4. Speed Checker LFM-30 or Digital Frequency Counter
5. Af Oscillator
6. Attenuator
7. Spring Scale
8. Cassette Torque Meter CQ-102A and CQ-201A
9. Test Tape P-4-A81 and WS-48
10. Blank Tape CS-10

**Torque Measurement**

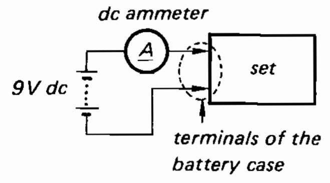
Keep the set horizontally.

| Torque | SONY Torque Meter | Permissible Reading |
|---|---|---|
| Forward | CQ-102A | 25 – 45 g·cm<br>(0.35 – 0.6 oz·inch) |
| Fast Forward and Rewind | CQ-201A | more than 55 g·cm<br>(0.77 oz·inch) |
| Cue and Review | CQ-201A | more than 55 g·cm<br>(0.77 oz·inch) |

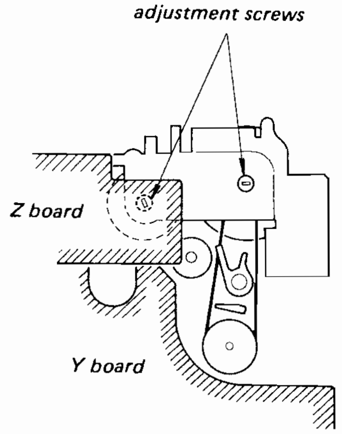
**Flywheel Thrust Play Adjustment**

**– playback mode –**

1. Remove the Z board and connect soldering portions between Z board and filter ass'y with extension leads.



2. Loosen the two adjustment screws.
3. Turn one of them clockwise carefully.
4. Stop turning it when the current suddenly increase and loosen it ¼ turn.
5. Adjust the other screw in the same way as step 3 and 4.
6. Secure the adjustment screws with locking compound.



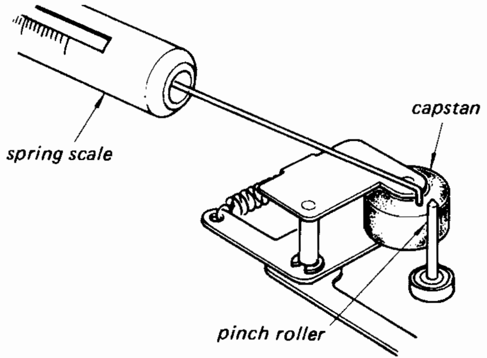
**Pinch Roller Pressure Measurement**

**– playback mode –**

Read the scale when the pinch roller just touches the capstan and starts to rotate.

**Permissible reading:**

200 – 300 g (7.1 – 10.5 oz)



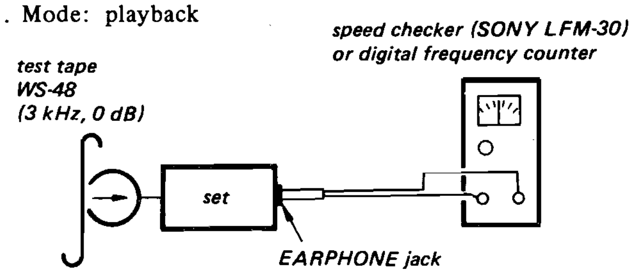
### Tape Speed Adjustment

**Setting:**

POWER switch: OFF
VOLUME control: mechanical mid
TONE control: maximum (fully clockwise)

**Procedure:**

1. Mode: playback


speed checker (SONY LFM-30) or digital frequency counter
test tape
WS-48
(3 kHz, 0 dB)
set
EARPHONE jack

Specifications

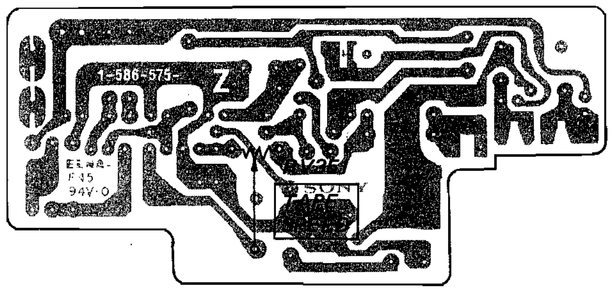
1)

| Speed checker | Digital frequency counter |
|---|---|
| ±3 % | 2910 Hz – 3090 Hz |

2. If the above specification is not satisfied, adjust RV351.

**Adjustment Location:**

**Z board**



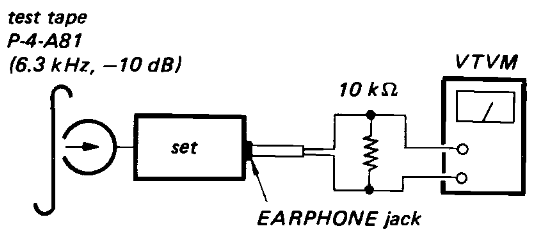
### Record/playback Head Azimuth Adjustment

**Setting:**

POWER switch: OFF
VOLUME control: mechanical mid
TONE control: maximum (fully clockwise)

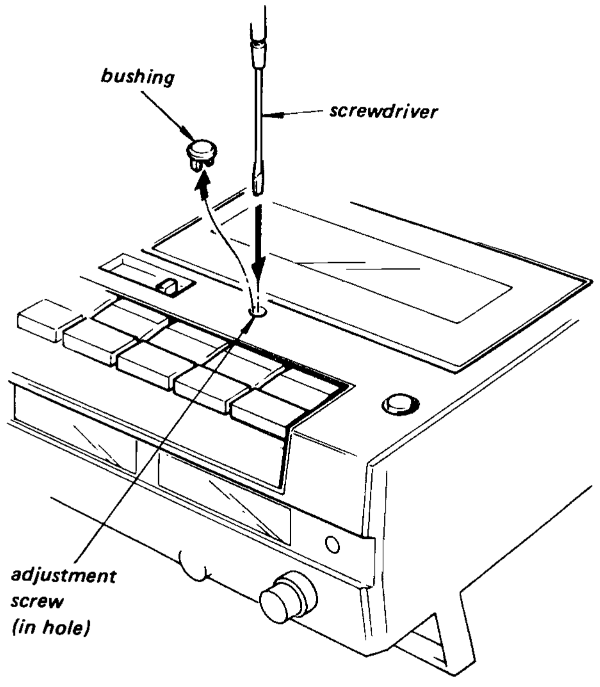
**Procedure:**

1. Mode: playback


test tape
P-4-A81
(6.3 kHz, –10 dB)
set
10 kΩ
VTVM
EARPHONE jack

2. Turn the adjustment screw for the highest VTVM reading.

**Note:** Several peaks may appear, take the highest.


bushing
screwdriver
adjustment
screw
(in hole)

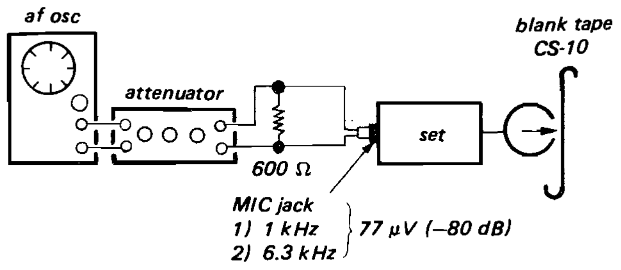
### Record Bias Adjustment

**Setting:**

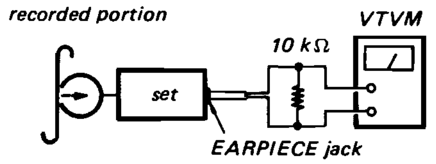
POWER switch: OFF
TONE control: maximum (fully clockwise)

**Procedure:**

1. Mode: record


af osc
attenuator
600 Ω
set
blank tape
CS-10
MIC jack
1) 1 kHz
2) 6.3 kHz
77 µV (–80 dB)

2. Mode: playback


recorded portion
10 kΩ
VTVM
set
EARPIECE jack

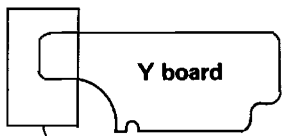
Playback the 1 kHz recorded portion and adjust VOLUME control for 0.25 V (–10 dB) VTVM reading.

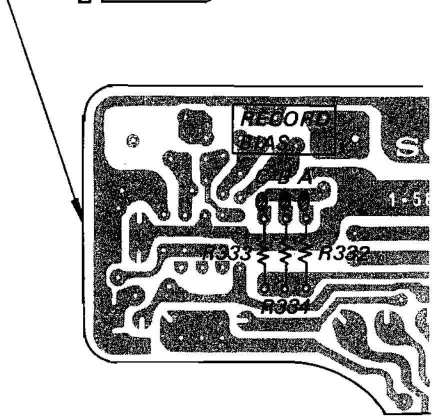
3. Playback the 6.3 kHz recorded portion and confirm that VTVM reading is within 0.22 to 0.3 V (–11 to –8.5 dB).

4. If necessary, change the soldering portion.

**Adjustment Locations:**

| *Soldering portion* | *6.3 kHz level* |
|---|---|
| A<br>B<br>C | down<br>↕<br>up |




RECORD BIAS
A
R333
R332
R334

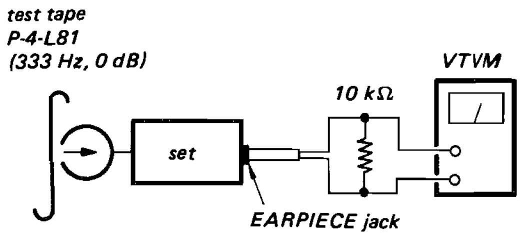
### Level Meter Adjustment

**Setting:**

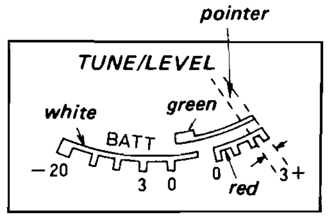
POWER switch: OFF

**Procedure:**

1. Mode: playback


test tape
P-4-L81
(333 Hz, 0 dB)
VTVM
10 kΩ
set
EARPIECE jack

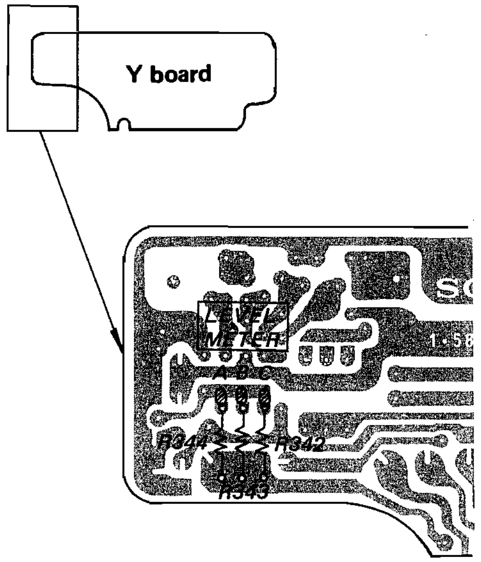
2. Confirm that pointer indicates as shown below.


pointer
TUNE/LEVEL
white
green
BATT
–20
3 0
0
red
3+

3. If necessary, change the soldering portion.

**Adjustment Locations:**

| *Soldering portion* | *Pointer diflection* |
|---|---|
| A<br>B<br>C | –<br>↕<br>+ |

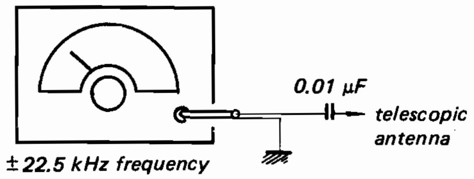

Y board
LEVEL METER
A B C
R344
R342
R343

## 3-2. RADIO SECTION

### (1) FM

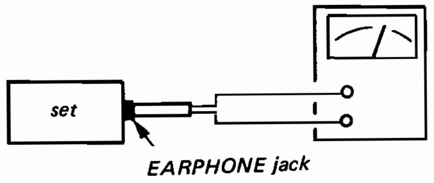
**Setting:** POWER switch: RADIO
RADIO BAND switch: FM

*FM rf signal generator*

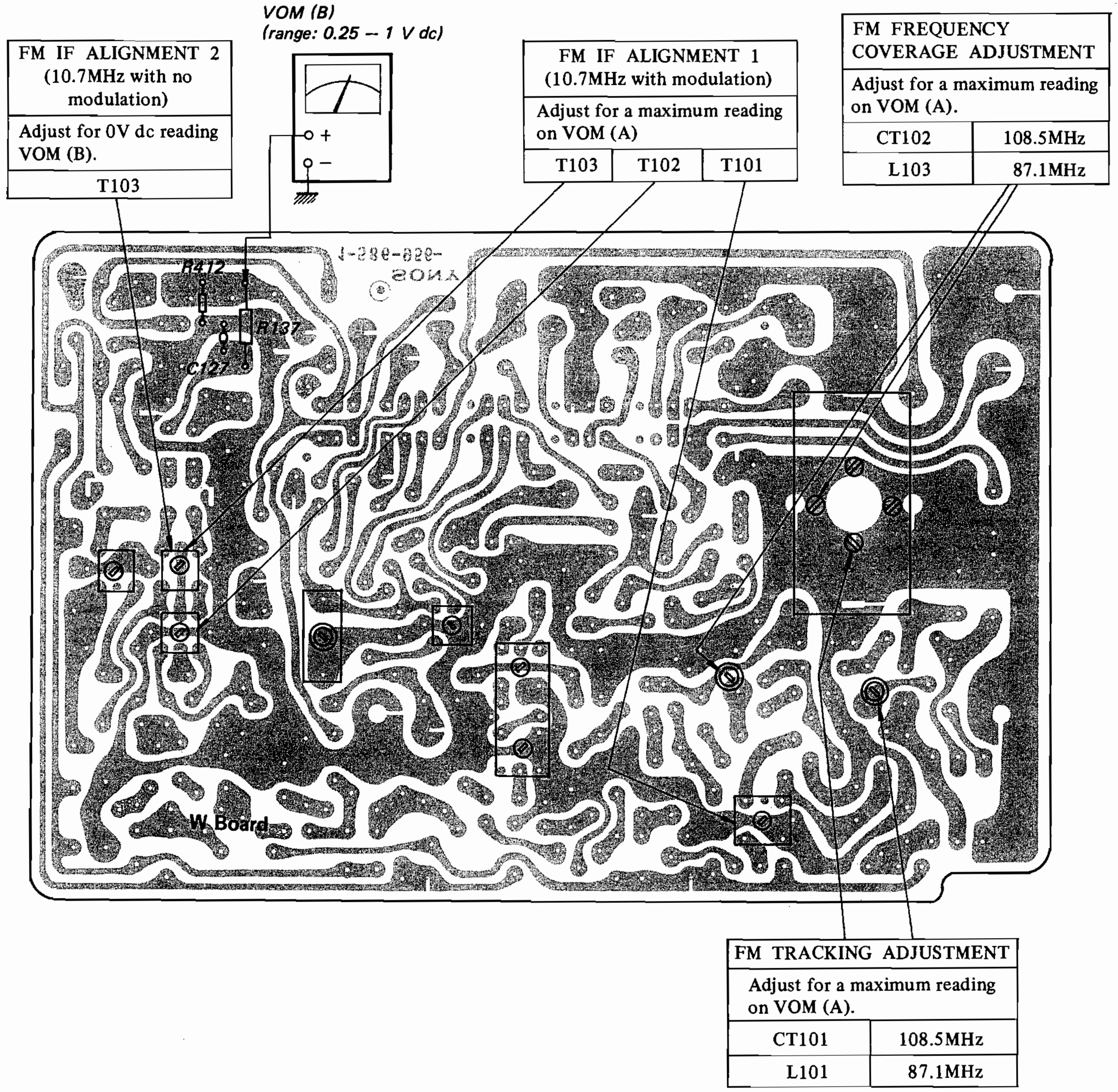


*±22.5 kHz frequency deviation by 400 Hz signal (modulation turned off for IF Alignment 2.)*

*VOM (A) (range: 0.5 – 5 V ac)*



**Note:** Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



*VOM (B) (range: 0.25 – 1 V dc)*

| FM IF ALIGNMENT 2 (10.7MHz with no modulation) |
|---|
| Adjust for 0V dc reading VOM (B). |
| T103 |

| FM IF ALIGNMENT 1 (10.7MHz with modulation) | | |
|---|---|---|
| Adjust for a maximum reading on VOM (A) | | |
| T103 | T102 | T101 |

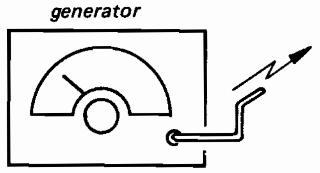
| FM FREQUENCY COVERAGE ADJUSTMENT | |
|---|---|
| Adjust for a maximum reading on VOM (A). | |
| CT102 | 108.5MHz |
| L103 | 87.1MHz |

| FM TRACKING ADJUSTMENT | |
|---|---|
| Adjust for a maximum reading on VOM (A). | |
| CT101 | 108.5MHz |
| L101 | 87.1MHz |

### (2) AM

**Setting:** POWER switch: RADIO
RADIO BAND switch: AM

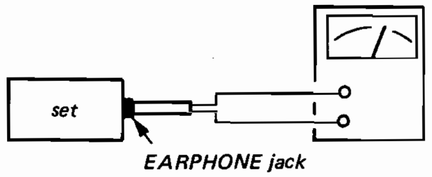
*AM rf signal generator*



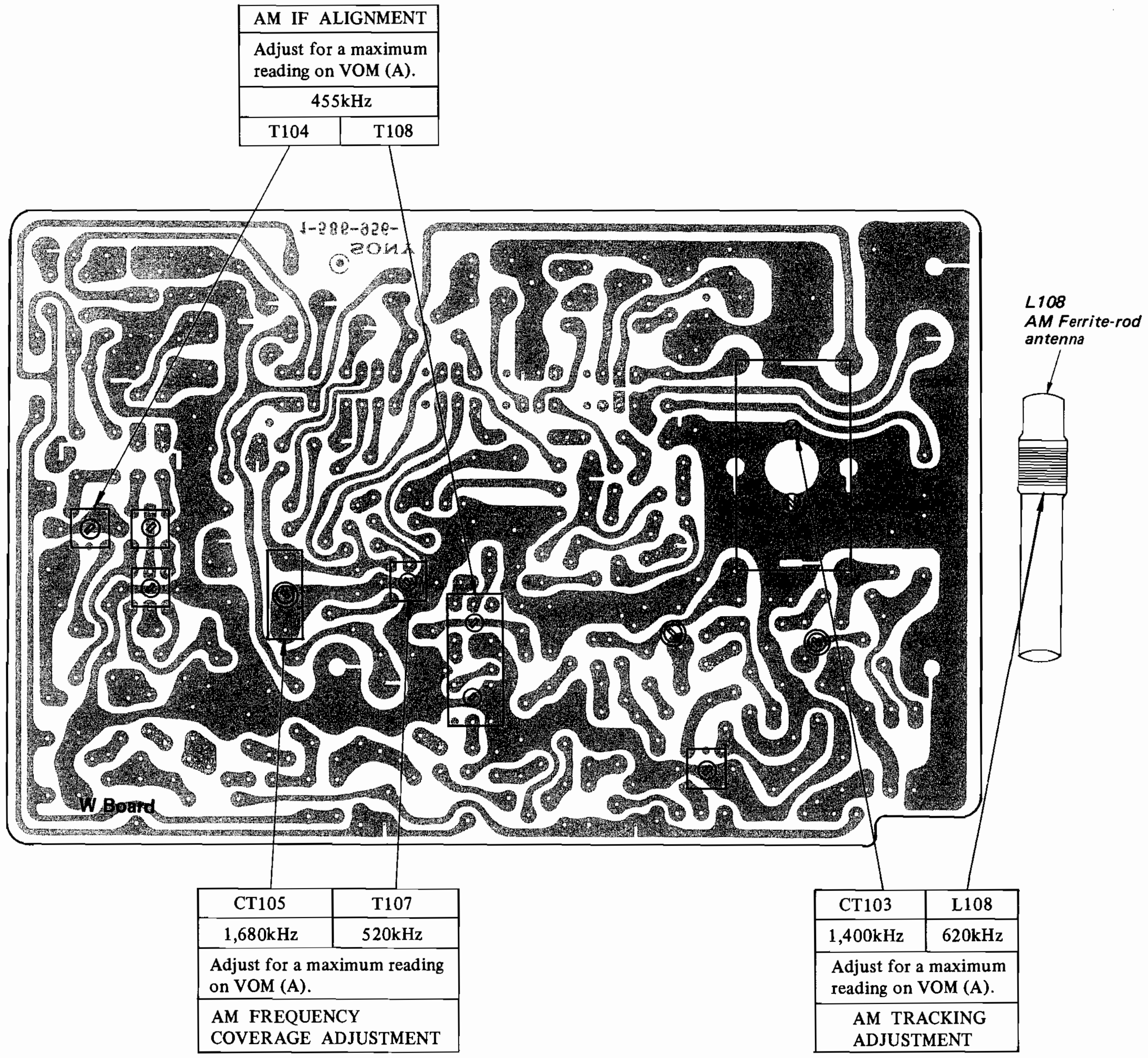
*Put the lead-wire antenna close to the set.*

*30 % amplitude modulation by 400 Hz signal.*

*VOM (A) (range: 0.5 – 5 V ac)*



**Note:** Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.



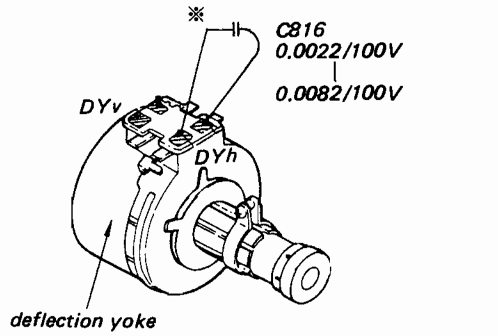
| AM IF ALIGNMENT | |
|---|---|
| Adjust for a maximum reading on VOM (A). | |
| 455kHz | |
| T104 | T108 |

| CT105 | T107 |
|---|---|
| 1,680kHz | 520kHz |
| Adjust for a maximum reading on VOM (A). | |
| AM FREQUENCY COVERAGE ADJUSTMENT | |

| CT103 | L108 |
|---|---|
| 1,400kHz | 620kHz |
| Adjust for a maximum reading on VOM (A). | |
| AM TRACKING ADJUSTMENT | |

### 3-3. TV SECTION

**Note:**
- Setting: POWER Switch: TV
- Test Equipment Required
  1. VOM
  2. Regulated DC Power Supply
  3. Oscilloscope
- Preparations
  1. Tune in an off-air signal.
  2. Set V. HOLD and H. HOLD controls for correct sync.
  3. Set CONTR and BRIGHT controls for best picture.
- These adjustment should be performed with 12V dc supplied to DC IN 12V jack, unless otherwise specified.


※
C816
0.0022/100V
|
0.0082/100V
DYv
DYh
deflection yoke

**H. SIZE**

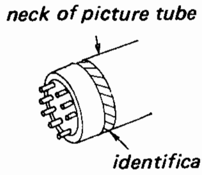
1. *Complete preparations.*
2. *Select the capacitance of C816 for best picture size.*

| Capacitance | Picture size |
|---|---|
| 0.0022/100V | narrow |
| 0.0033/100V | ↕ |
| 0.0047/100V | |
| 0.0068/100V | |
| 0.0082/100V | wide |

**V. SIZE**

1. *Complete preparations.*
2. *Adjust RV552 for best vertical size.*

**SCRN**


neck of picture tube
identification mark

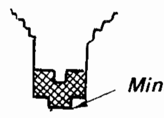
| Identification Mark | Soldering Portion |
|---|---|
| Black | A and B |
| Red | Open |
| No mark | A |

**DET OUTPUT LEVEL ADJ**

1. *Complete preparations.*
2. *When the output voltage is lower than 0.55Vp-p, solder the portion marked ▨.*

**4.5MHz TRAP**

1. *Complete preparations.*
2. *Turn tuning knob clockwise for 4.5MHz beat on the oscilloscope.*
3. *Adjust L204 for minimum 4.5MHz beat.*



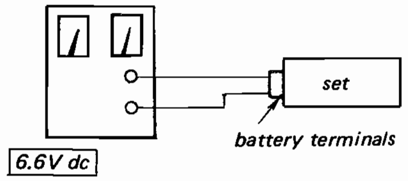
*Minimize 4.5MHz beat.*

**SIF**

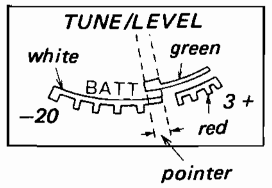
*Adjust T202 and T203 for maximum-clear sound.*

**BATTERY METER**

1. *Set POWER switch to TV position.*
2. *Supply 6.6V dc to battery terminals.*

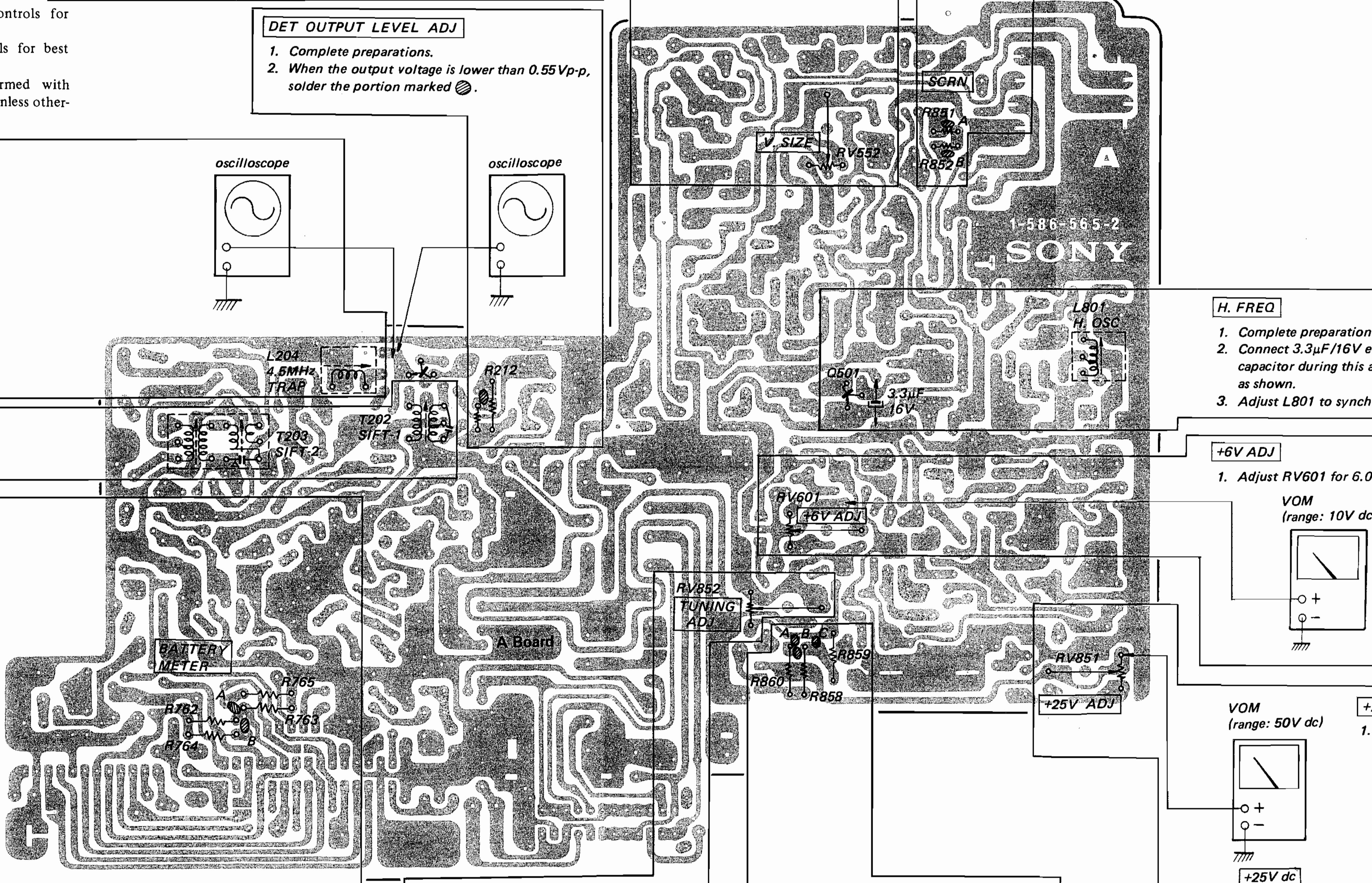

regulated dc power supply
set
battery terminals
6.6V dc

3. *Confirm that pointer indicates as shown below.*


TUNE/LEVEL
white
green
BATT
−20
3 +
red
pointer

4. *If necessary, change the soldering portion.*

| Soldering portion | Pointer diflection |
|---|---|
| A | − |
| OPEN | ↕ |
| B | + |


oscilloscope
oscilloscope
SCRN
R851
R852
A
B
V. SIZE
RV552
A
1-586-565-2
SONY
L801
H. OSC
Q501
3.3μF
16V
L204
4.5MHz
TRAP
R212
T202
SIFT-1
T203
SIFT-2
RV601
+6V ADJ
RV852
TUNING
ADJ
A
B
C
R859
R860
R858
A Board
BATTERY
METER
R765
R762
R763
R764
A
B
RV851
+25V ADJ
VOM
(range: 10V dc)
+
−
VOM
(range: 50V dc)
+
−
+25V dc

**H. FREQ**

1. *Complete preparations.*
2. *Connect 3.3μF/16V electrolytic capacitor during this adjustment as shown.*
3. *Adjust L801 to synchronize the picture.*

**+6V ADJ**

1. *Adjust RV601 for 6.0V dc on VOM.*

**+25V ADJ**

1. *Adjust RV851 for +25V dc reading on VOM.*

**TUNING ADJ**

1. *Complete preparations.*
2. *Set TV BAND switch to VHF-H position.*
3. *Set dial film to lowest broadcast channel by turning tuning knob.*
4. *Adjust RV852 so that best picture and best sound are obtained.*

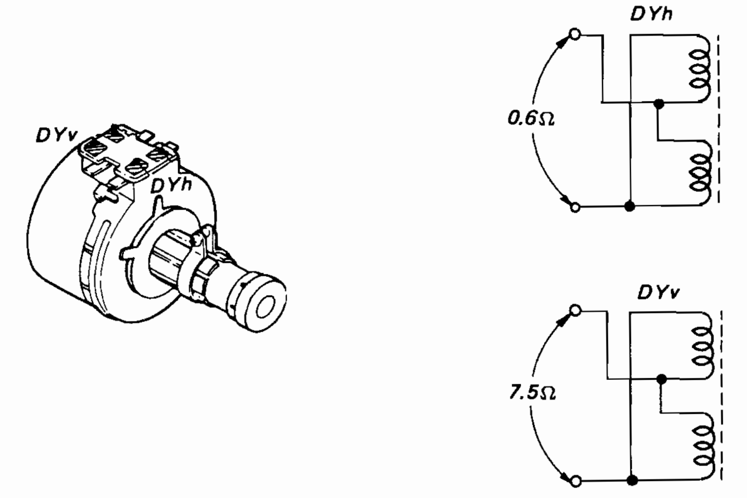
**TUNER BIAS**

1. *Complete preparations.*
2. *Set TV BAND switch to VHF-L position.*
3. *Set dial film lowest broadcasting channel.*
4. *Solder or unsolder A, B and C portions so that best picture and best sound are obtained.*

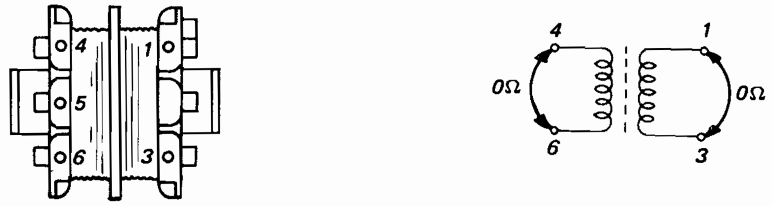
# SECTION 4
# DIAGRAMS

## 4-1. DC RESISTANCE AND WINDING DIAGRAMS OF COILS AND TRANSFORMERS

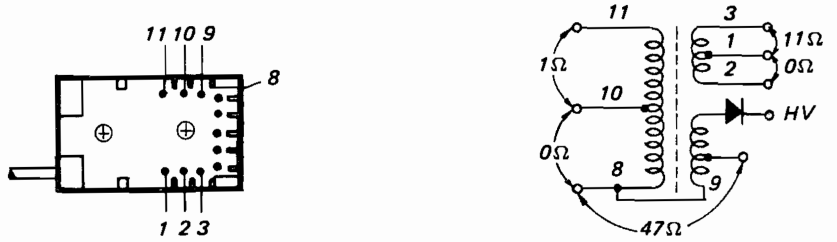
**L901 DY**


DYv
DYh
DYh
0.6Ω
DYv
7.5Ω

**T401 HT**


4
5
6
1
3
4
1
0Ω
0Ω
6
3

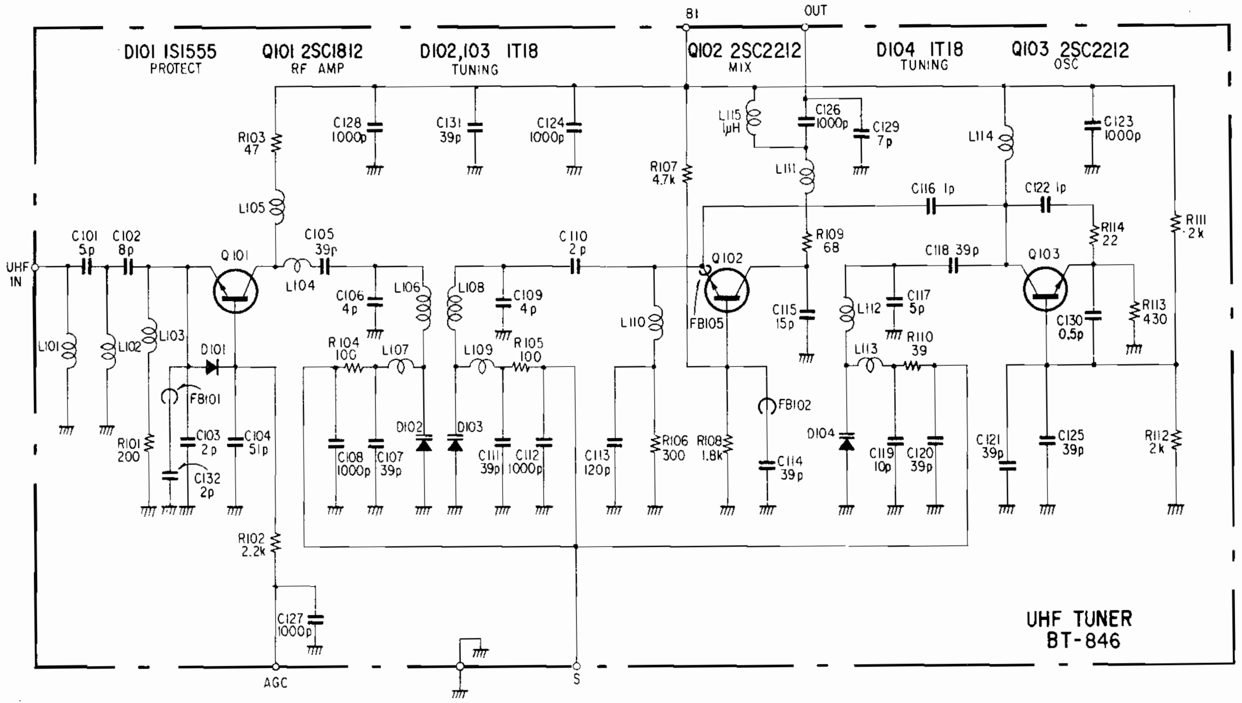
**T801 FBT**


11 10 9
8
1 2 3
11
3
1Ω
1
11Ω
2
0Ω
10
HV
0Ω
8
9
47Ω

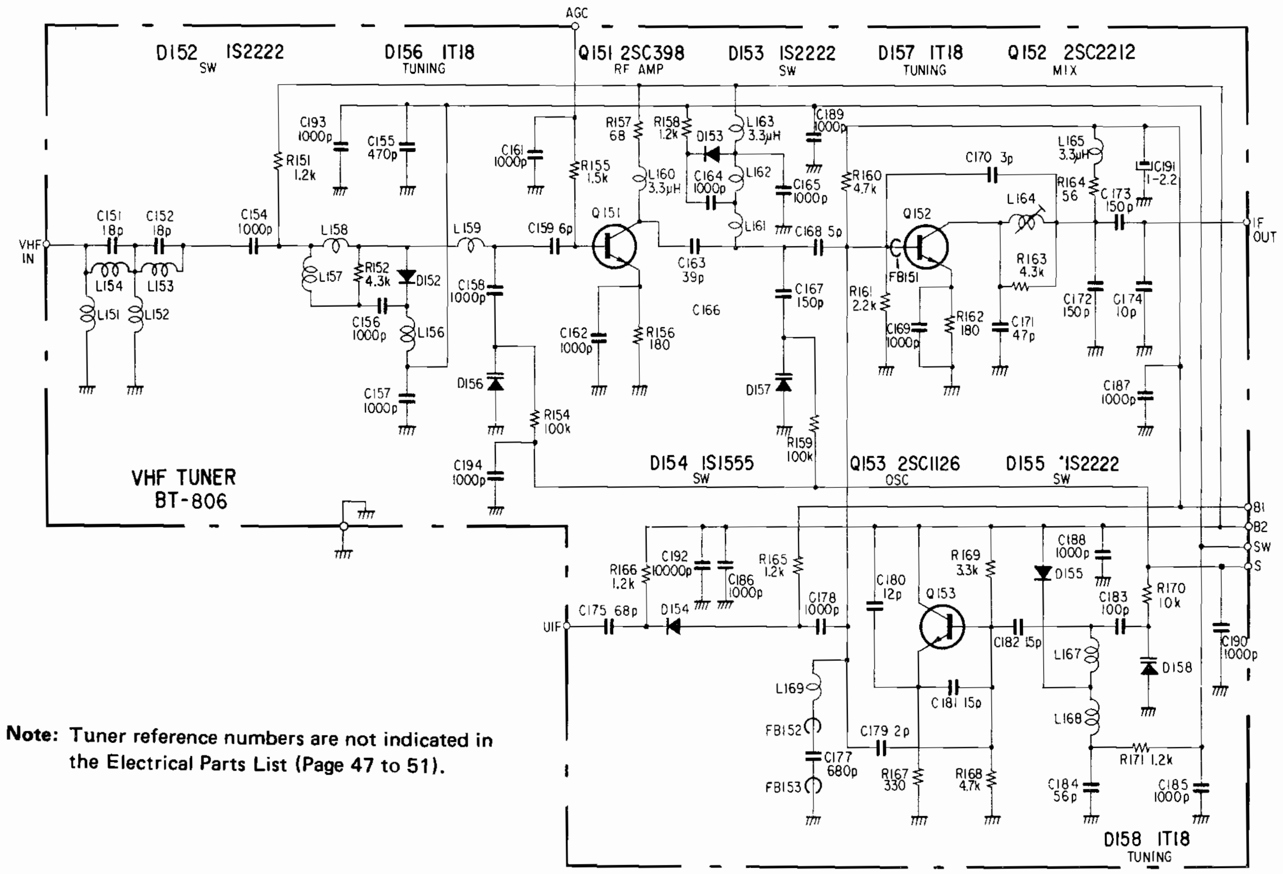
**Note:**
DC resistance measurements shown with coils and transformers disconnected from circuit.

## 4-2. VHF AND UHF TUNER SCHEMATIC DIAGRAM

### – UHF Tuner –
(BT-846)


B1
OUT
D101 IS1555 PROTECT
Q101 2SC1812 RF AMP
D102,103 IT18 TUNING
Q102 2SC2212 MIX
D104 IT18 TUNING
Q103 2SC2212 OSC
UHF IN
UHF TUNER
BT-846
AGC
S

### –VHF Tuner –
(BT-806)

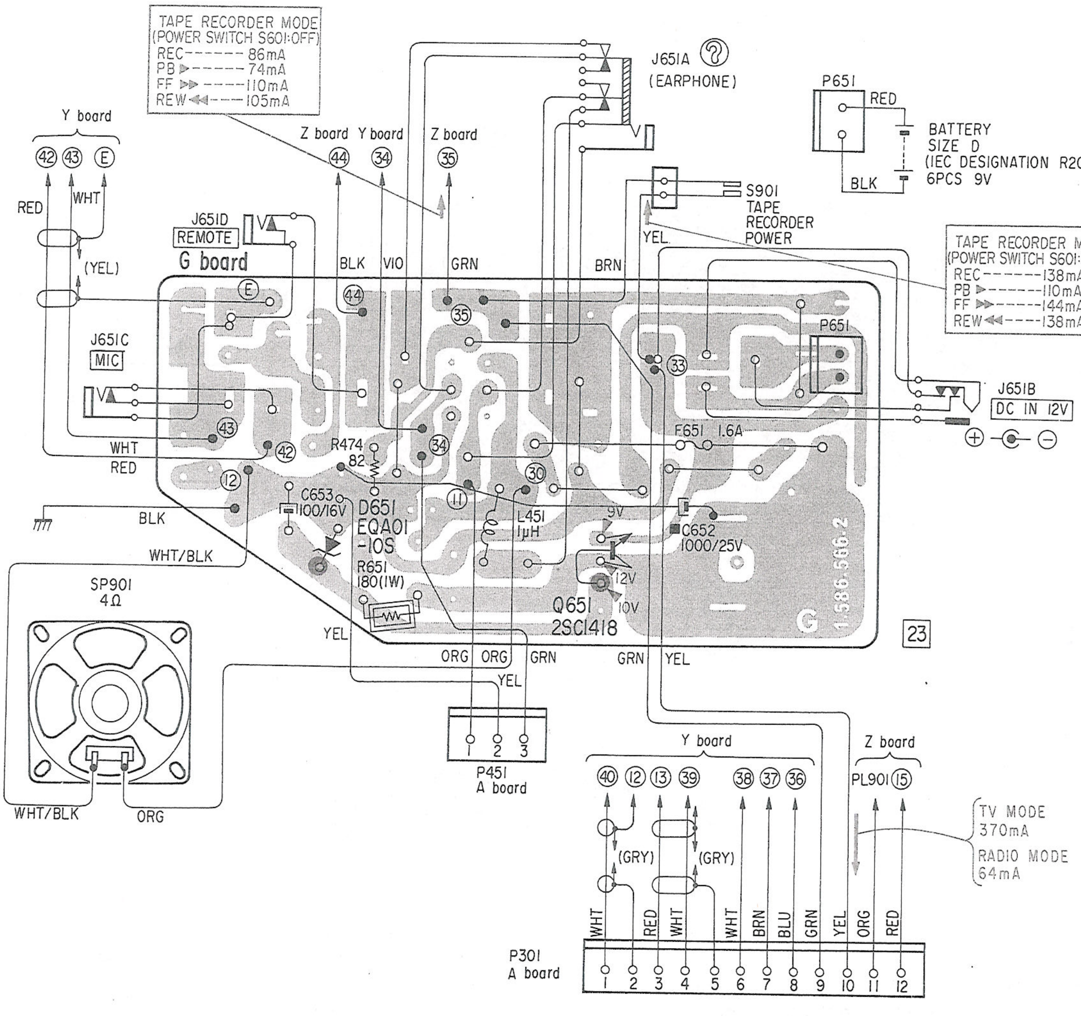

AGC
D152 IS2222 SW
D156 IT18 TUNING
Q151 2SC398 RF AMP
D153 IS2222 SW
D157 IT18 TUNING
Q152 2SC2212 MIX
VHF IN
IF OUT
D154 IS1555 SW
Q153 2SC1126 OSC
D155 IS2222 SW
D158 IT18 TUNING
VHF TUNER
BT-806
B1
B2
SW
S
UIF

**Note:** Tuner reference numbers are not indicated in the Electrical Parts List (Page 47 to 51).

## 4-3. MOUNTING DIAGRAMS

*– Conductor Side –*

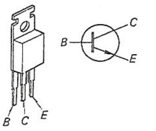
**– G Board – (Canadian Model)**


TAPE RECORDER MODE
(POWER SWITCH S601:OFF)
REC------86mA
PB ▶------74mA
FF ▶▶-----110mA
REW ◀◀----105mA
J651A
(EARPHONE)
P651
RED
BATTERY
SIZE D
(IEC DESIGNATION R20)
6PCS 9V
BLK
Y board
42 43 E
RED
WHT
(YEL)
Z board
44
Y board
34
Z board
35
S901
TAPE
RECORDER
POWER
YEL
J651D
REMOTE
G board
BLK
VIO
GRN
BRN
TAPE RECORDER MODE
(POWER SWITCH S601:OFF)
REC------138mA
PB ▶------110mA
FF ▶▶-----144mA
REW ◀◀----138mA
J651C
MIC
E
44
35
33
P651
J651B
DC IN 12V
⊕ -◐- ⊖
43
42
F651 1.6A
R474
82
34
WHT
RED
12
30
11
C653
100/16V
D651
EQA01
-10S
L451
1μH
9V
C652
1000/25V
BLK
WHT/BLK
R651
180(1W)
12V
10V
Q651
2SC1418
SP901
4Ω
YEL
ORG
ORG
GRN
GRN
YEL
YEL
23
1 2 3
P451
A board
WHT/BLK
ORG
Y board
40 12 13 39
38 37 36
Z board
PL901 15
(GRY)
(GRY)
TV MODE
370mA
RADIO MODE
64mA
WHT RED WHT WHT BRN BLU GRN YEL ORG RED
P301
A board
1 2 3 4 5 6 7 8 9 10 11 12

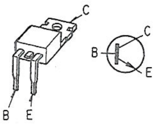
**Note:**

- ● ○—— : parts extracted from the component side.
- ● ●—— : parts extracted from the conductor side.
- ● ■ : part mounted on the conductor side.

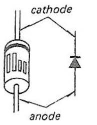
**2SC1061**



**2SC1418**

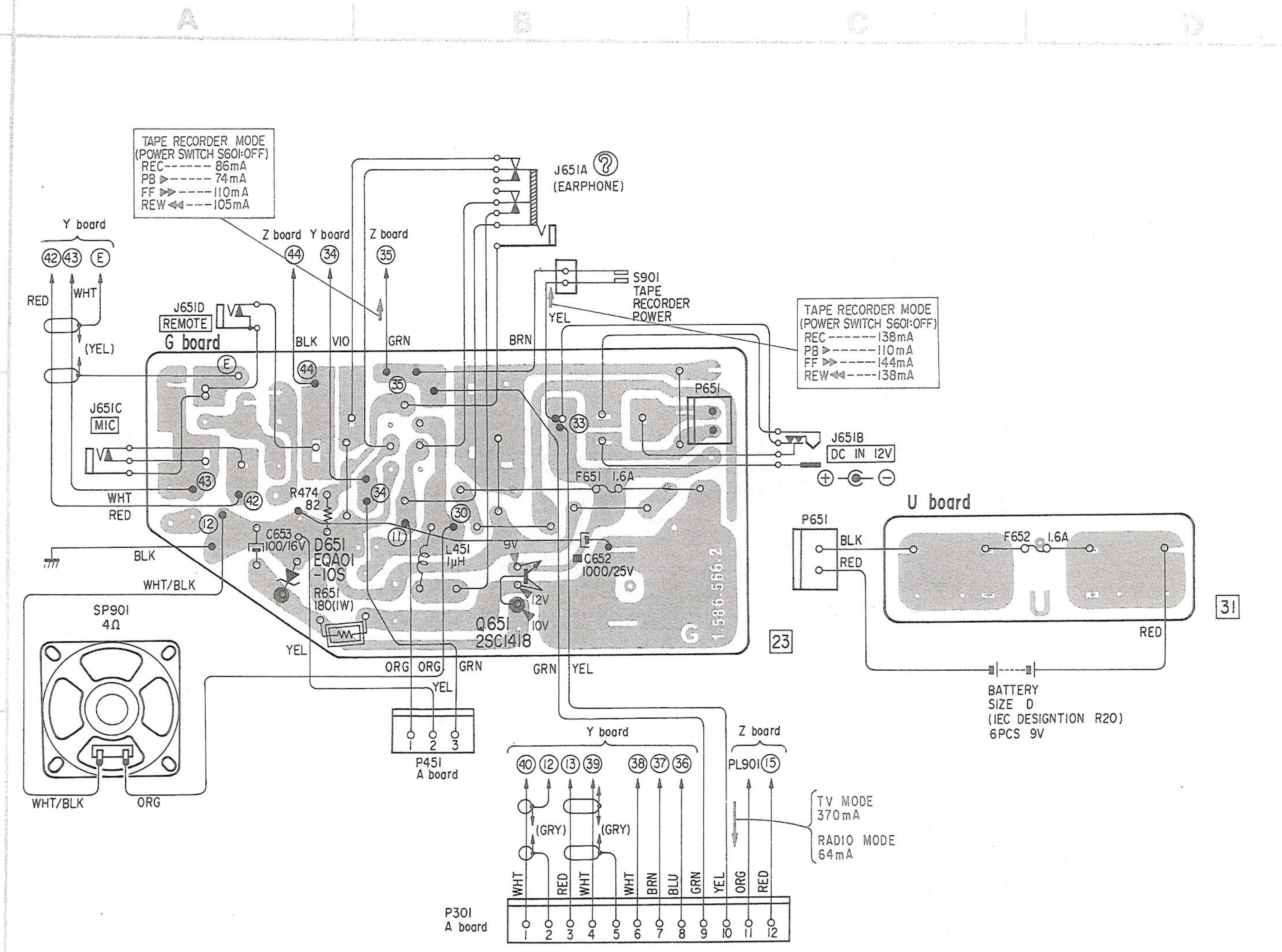


**EQA01-10S**


cathode
anode

**G** [AF, REG] **U** [BATT]

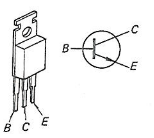
## – G and U Boards – (US Model)


A
B
C
D
1
2
3
TAPE RECORDER MODE
(POWER SWITCH S601:OFF)
REC------86mA
PB ▷-----74mA
FF ▷▷----110mA
REW ◁◁---105mA
J651A
(EARPHONE)
Y board
42
43
E
Z board
44
Y board
34
Z board
35
RED
WHT
(YEL)
J651D
REMOTE
G board
BLK
VIO
GRN
BRN
S901
TAPE
RECORDER
POWER
YEL
TAPE RECORDER MODE
(POWER SWITCH S601:OFF)
REC------138mA
PB ▷-----110mA
FF ▷▷----144mA
REW ◁◁---138mA
J651C
MIC
P651
33
J651B
DC IN 12V
F651 1.6A
WHT
RED
R474
82
U board
P651
BLK
RED
F652 1.6A
12
C653
100/16V
D651
EQA01
-10S
30
11
L451
1μH
9V
C652
1000/25V
BLK
WHT/BLK
R651
180(1W)
12V
10V
Q651
2SC1418
SP901
4Ω
YEL
23
1-586-586-2
31
RED
ORG
ORG
GRN
GRN
YEL
YEL
BATTERY
SIZE D
(IEC DESIGNTION R20)
6PCS 9V
1 2 3
P451
A board
Y board
40
12
13
39
38
37
36
Z board
PL901
15
WHT/BLK
ORG
(GRY)
(GRY)
TV MODE
370mA
RADIO MODE
64mA
WHT
RED
WHT
WHT
BRN
BLU
GRN
YEL
ORG
RED
P301
A board
1 2 3 4 5 6 7 8 9 10 11 12
4

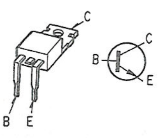
**Note:**

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.

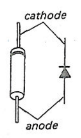
**2SC1061**



**2SC1418**

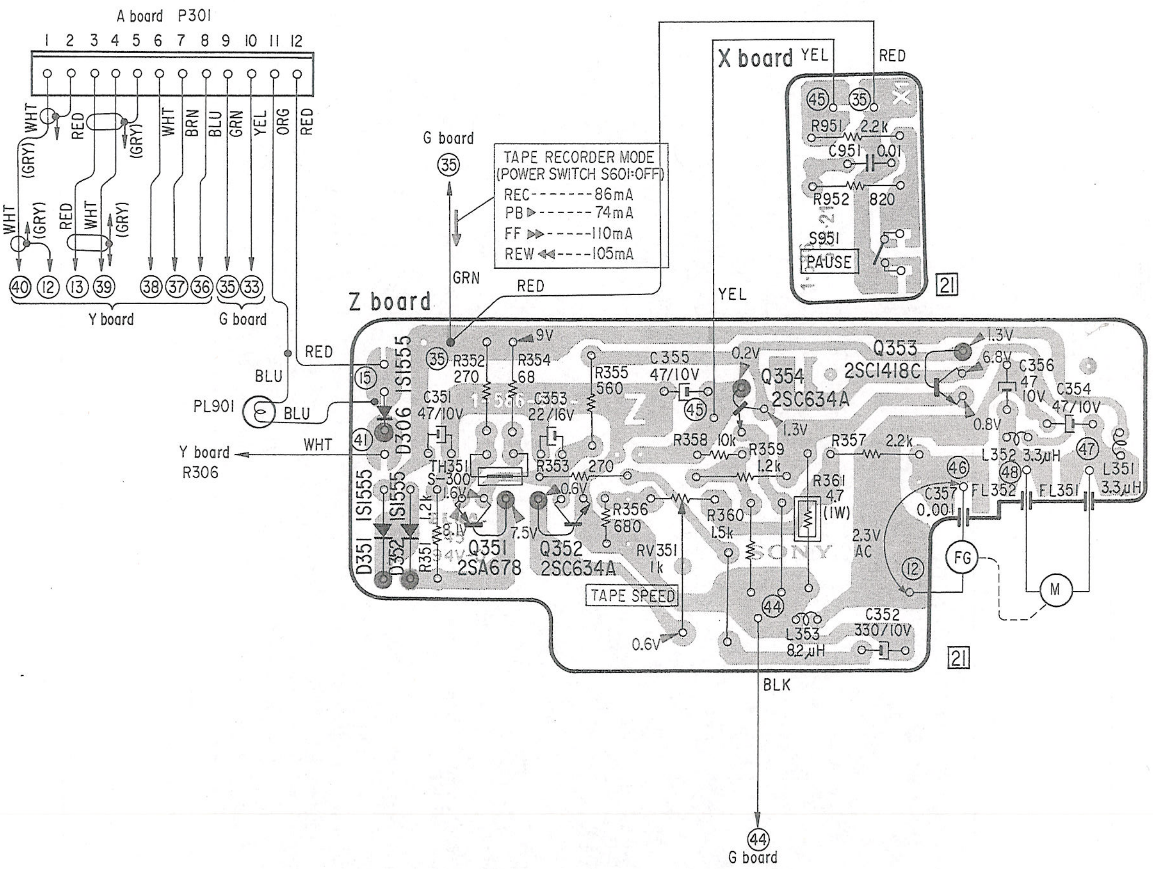


**EQA01-10S**


cathode
anode

[PAUSE] **X** [MOTOR DRIVE] **Z**

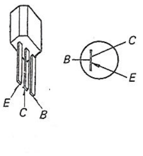
## – Z and X Boards –


A
B
C
D
A board P301
1 2 3 4 5 6 7 8 9 10 11 12
WHT
(GRY)
RED
(GRY)
WHT
BRN
BLU
GRN
YEL
ORG
RED
40 12 13 39 38 37 36 35 33
Y board
G board
G board
35
TAPE RECORDER MODE
(POWER SWITCH S601:OFF)
REC--------86mA
PB ▷-------74mA
FF ▷▷------110mA
REW ◁◁-----105mA
GRN
RED
YEL
X board
RED
45 35
R951 2.2k
C951 0.01
R952 820
S951
PAUSE
21
Z board
RED
BLU
PL901
BLU
WHT
Y board
R306
15
41
35
D306 1S1555
D351 1S1555
D352 1S1555
R352 270
R354 68
9V
C351 47/10V
C353 22/16V
R355 560
C355 47/10V
0.2V
Q354 2SC634A
45
Q353 2SC1418C
1.3V
6.8V
C356 47 10V
C354 47/10V
0.8V
R358 10k
R359 1.2k
1.3V
R357 2.2k
TH351 S-300
R353 270
1.6V
0.6V
R356 680
RV351 1k
R360 1.5k
R361 47 (1W)
46
48
47
L352 3.3μH
L351 3.3μH
C357 0.001
FL352
FL351
2.3V AC
R351 1.2k
8.1V
7.5V
Q351 2SA678
Q352 2SC634A
TAPE SPEED
12
FG
M
44
L353 82μH
C352 330/10V
0.6V
21
BLK
44
G board

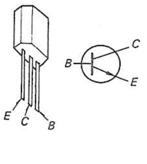
**Note:**

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- Voltages are taken under no-signal conditions in playback mode with VOM (20kΩ/V).
  { } : record mode

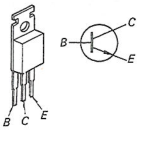
**2SA678**
**2SA1027R**



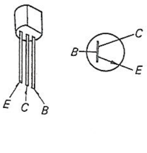
**2SC634A**



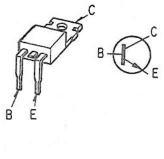
**2SC1061**



**2SC1364**

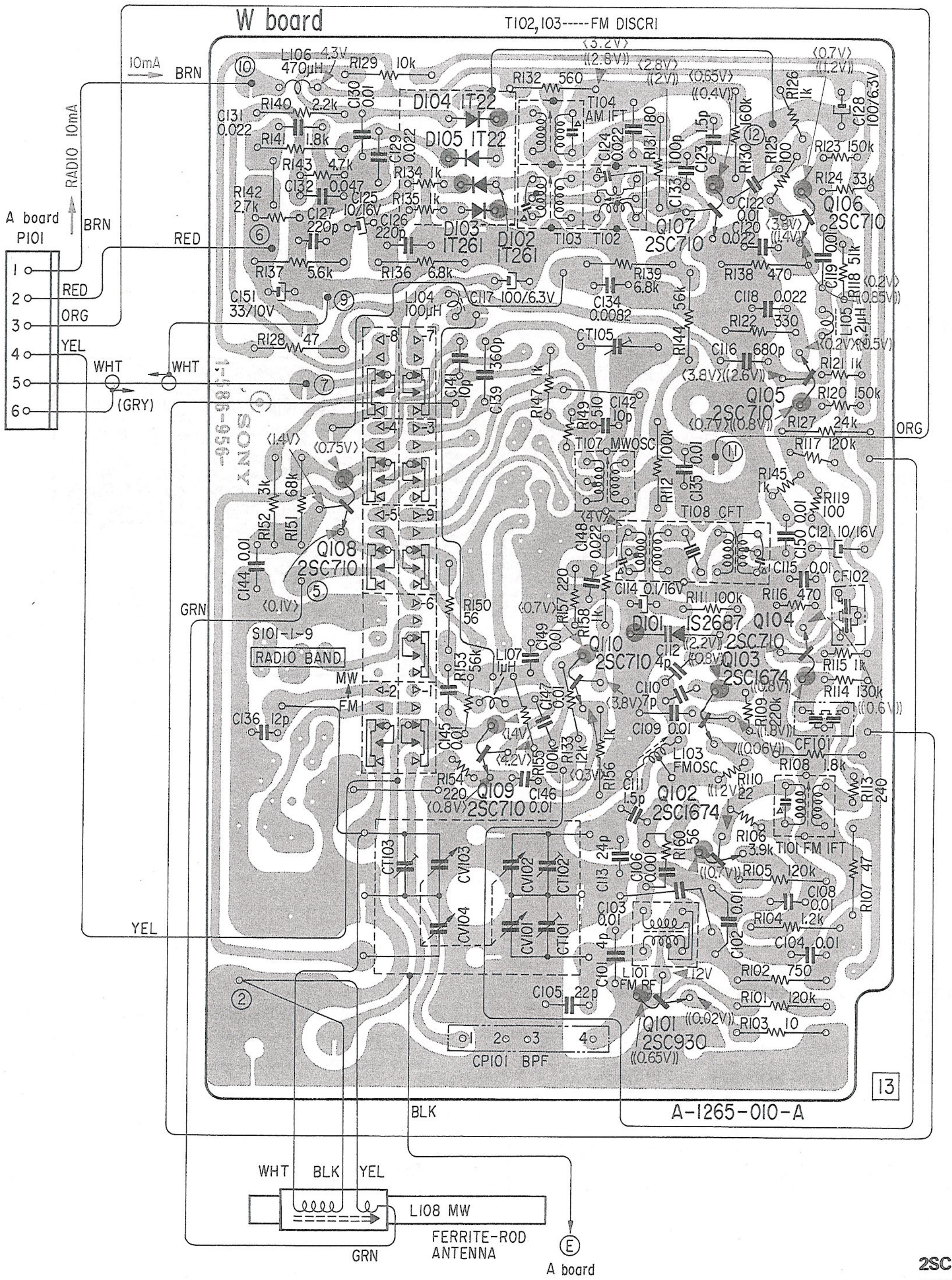


**2SC1418**



## W [RADIO SECTION]

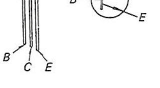
– W Board –


W board
T102,103-----FM DISCRI
10mA
BRN
RADIO 10mA
A board
P101
1
2
3
4
5
6
RED
ORG
YEL
WHT
(GRY)
GRN
L106 470μH
R129 10k
R132 560
D104 1T22
D105 1T22
D103 1T261
D102 1T261
T104 AM IFT
T103
T102
Q107 2SC710
Q106 2SC710
Q105 2SC710
Q108 2SC710
Q110 2SC710
Q109 2SC710
Q104 2SC710
Q103 2SC1674
Q102 2SC1674
Q101 2SC930
D101 1S2687
L104 100μH
L105 1.2μH
L107 1μH
L103 FMOSC
L101 FM RF
T107 MWOSC
T108 CFT
T101 FM IFT
CF101
CF102
CT105
S101-1-9
RADIO BAND
MW
FM
CT103
CV103
CV102
CT102
CV104
CV101
CT101
1-686-956-
SONY
CP101 BPF
A-1265-010-A
13
BLK
WHT
BLK
YEL
L108 MW
FERRITE-ROD ANTENNA
GRN
E
A board

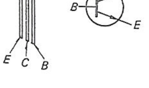
| Q | D |
|---|---|
| | 104 |
| | 105 |
| 107 | 102 |
| 106 | 103 |
| 105 | |
| 108 | |
| | 101 |
| 104 | |
| 110 | |
| 103 | |
| 109 | |
| 102 | |
| 101 | |
| Q | D |

**Note:**
- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- Voltages are taken under detuned conditions with VOM (20kΩ/V).
  (( )) : FM
  <> : AM

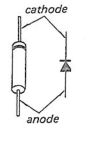
**2SC710**



**2SC930**
**2SC1364**
**2SC1674**



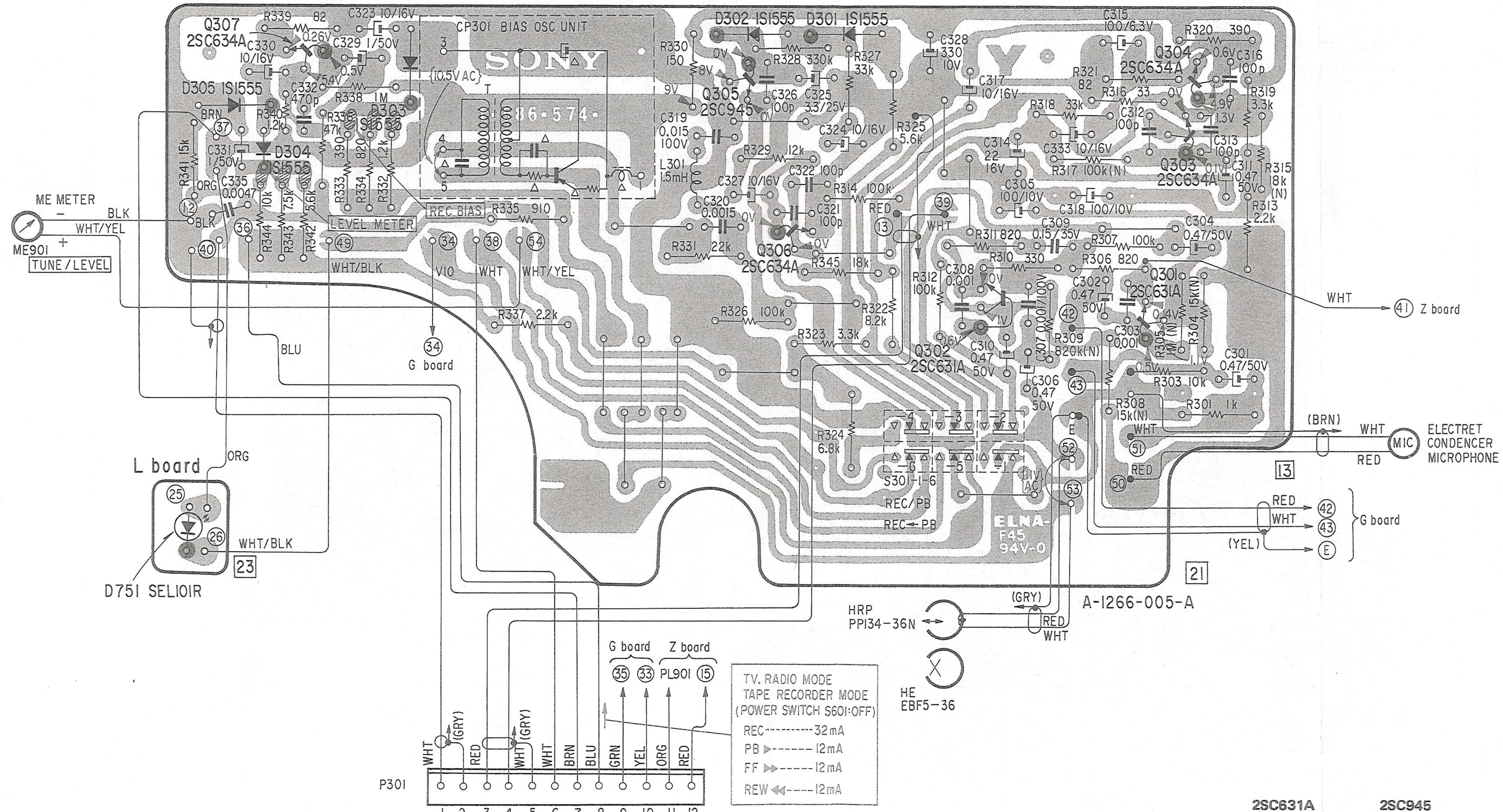
**1S2687**
**1T22**
**1T22AM**
**1T261**


cathode
anode

**L** TAPE RECORDER SECTION **Y** **Y**

## — Y and L Boards —

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Q | 307 | | 305 | 306 | | 302 | 301 | 304<br>303 | Q |
| D | 305<br>751 304 | 303 | 302 | | 301 | | | | D |

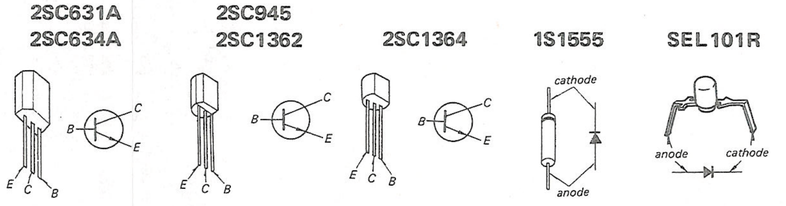

Y board
Q307 2SC634A
R339 82
C323 10/16V
CP301 BIAS OSC UNIT
C330 10/16V
C329 1/50V
0.26V
0.5V
{10.5V AC}
D305 1S1555
C332 470p
R338 1M
D303 1S1555
R340 12k
R336 47k
BRN
37
R341 15k
C331 1/50V
D304 1S1555
C335 0.0047
ORG
BLK
12
36
40
R344 10k
R343 7.5k
R342 5.6k
R334 390
R333
R332 1.2k
820
LEVEL METER
REC BIAS
R335 910
49
34
38
54
V10
WHT
WHT/YEL
WHT/BLK
R337 2.2k
BLU
34
G board
ME METER
BLK
WHT/YEL
ME901
TUNE/LEVEL
L board
ORG
25
26
WHT/BLK
23
D751 SEL101R
D302 1S1555 D301 1S1555
R330 150
8V
0V
9V
R328 330k
R327 33k
Q305 2SC945
C326 100p
C325 3.3/25V
C319 0.015 100V
L301 1.5mH
C324 10/16V
R325 5.6k
R329 12k
C327 10/16V
C322 100p
C320 0.0015
R314 100k
C321 100p
RED
13
Q306 2SC634A
R331 22k
R345 18k
R326 100k
R322 8.2k
R323 3.3k
R324 6.8k
S301-1-6
REC/PB
REC ← PB
ELNA F45 94V-0
C328 330 10V
C317 10/16V
C315 100/6.3V
R320 390
Q304 2SC634A
C316 100p
R321 82
R318 33k
R316 33
C312 100p
R319 3.3k
C333 10/16V
C313 100p
R317 100k(N)
Q303 2SC634A
C311 0.47 50V
R315 18k (N)
R313 2.2k
C314 22 16V
C305 100/10V
C318 100/10V
39
WHT
R311 820
C309 0.15/35V
R307 100k
C304 0.47/50V
R310 330
R306 820
R312 100k
C308 0.001
C302 0.47 50V
Q301 2SC631A
R305 15k(N)
C307 0.001/100V
42
R309 820k(N)
C303 0.001
R304
C310 0.47 50V
Q302 2SC631A
C306 0.47 50V
43
R303 10k
C301 0.47/50V
R308 15k(N)
R301 1k
E
52
53
51
50
WHT
RED
(BRN)
WHT
RED
MIC
ELECTRET CONDENCER MICROPHONE
13
WHT
41 Z board
RED 42
WHT 43
(YEL) E
G board
21
A-1266-005-A
(GRY)
RED
WHT
HRP PP134-36N
HE EBF5-36
G board Z board
35 33 PL901 15
WHT (GRY) RED WHT (GRY) WHT BRN BLU GRN YEL ORG RED
P301
1 2 3 4 5 6 7 8 9 10 11 12

TV. RADIO MODE
TAPE RECORDER MODE
(POWER SWITCH S601:OFF)

REC ---------- 32mA
PB ▶ ------- 12mA
FF ▶▶ ------ 12mA
REW ◀◀ ----- 12mA

**Note:**

- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- Voltages are taken under no-signal conditions in playback mode with VOM (20kΩ/V).
  { } : record mode

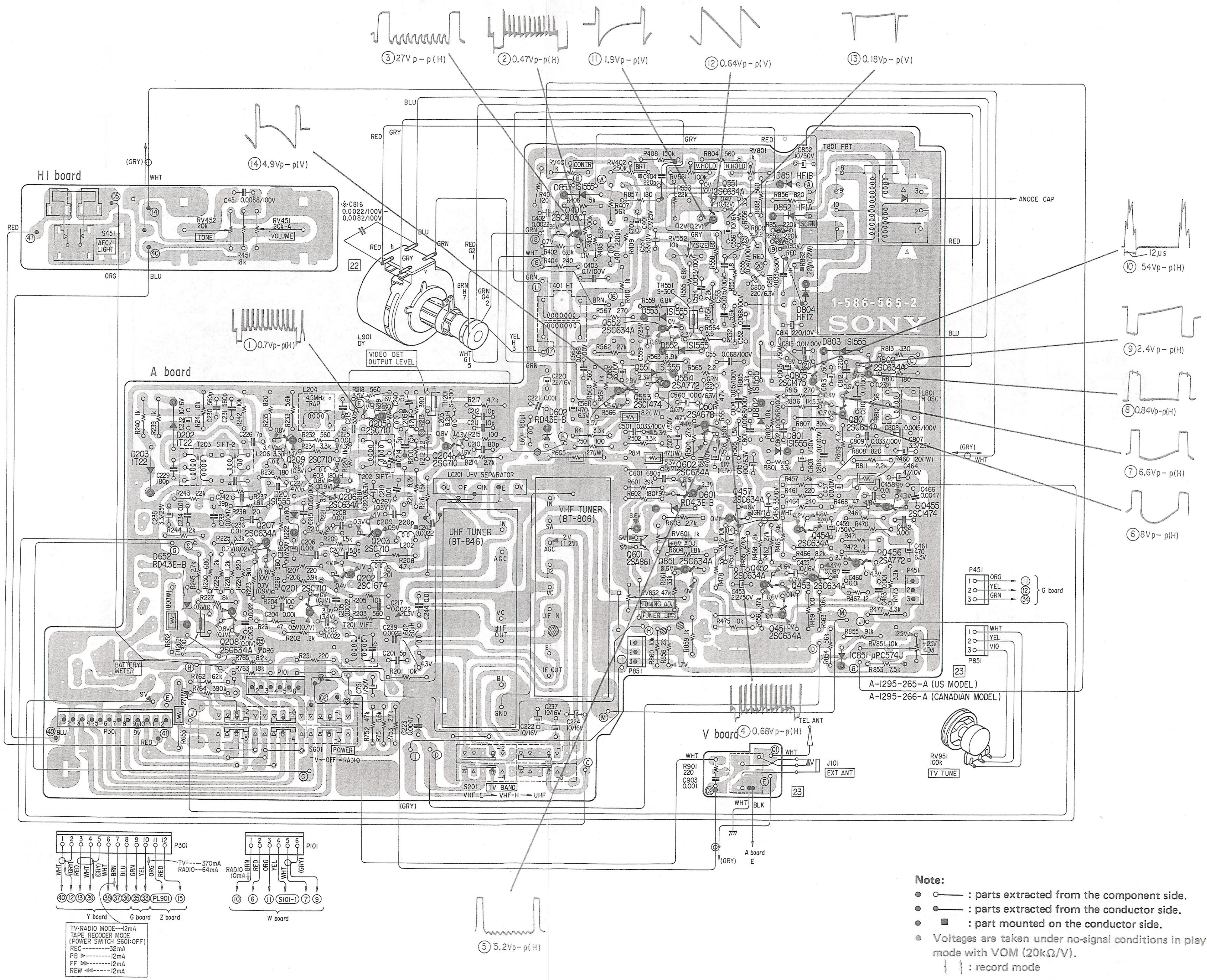

2SC631A
2SC634A
2SC945
2SC1362
2SC1364
1S1555
SEL101R
B
C
E
cathode
anode

**H1** **TV SECTION** **A**

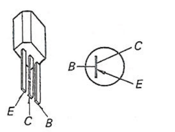
**FX-412 FX-412**

**A** **V**

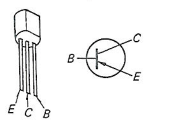
| IC,Q | D | ADJ |
|---|---|---|
| | | RV401 |
| | | RV402 |
| | 851 | RV551 |
| | 853 | RV801 |
| 551 | 852 | R851 |
| | | R852 |
| 401 | | |
| | | RV552 |
| | 804 | |
| | 553 | |
| 552 | | |
| | 803 | |
| | 552 | |
| 802 | 551 | |
| 803 | | |
| 554 | | |
| 553 | | L204 |
| 801 | | |
| 205 | | |
| 501 | 802 | |
| 209 | 202 | T203 |
| | 602 | T202 |
| 204 | 801 | R200 |
| | 203 | |
| 602 | | |
| 206 455 | 601 | |
| 457 | 201 | |
| 454 | | |
| 203 601 | | RV601 |
| 207 | | |
| 202 456 | | |
| 851 | | |
| 453 | | |
| 452 | | RV852 |
| 201 451 | 652 | |
| 208 | | |
| | | RV851 |
| IC851 | | R860 |
| | | R858 |
| | | R765 |
| | | R764 |
| IC,Q | D | ADJ |


③27Vp-p(H)
②0.47Vp-p(H)
⑪1.9Vp-p(V)
⑫0.64Vp-p(V)
⑬0.18Vp-p(V)
⑭4.9Vp-p(V)
①0.7Vp-p(H)
⑩54Vp-p(H)
12μs
⑨2.4Vp-p(H)
⑧0.84Vp-p(H)
⑦6.6Vp-p(H)
⑥8Vp-p(H)
④0.68Vp-p(H)
⑤5.2Vp-p(H)
H1 board
A board
V board
AFC/LIGHT
TONE
VOLUME
S451
C816 0.0022/100V 0.0082/100V
L901 DY
VIDEO DET OUTPUT LEVEL
T801 FBT
ANODE CAP
1-586-565-2
SONY
CONTR
BRT
V.HOLD
H.HOLD
V.SIZE
SCRN
LC201 U-V SEPARATOR
UHF TUNER (BT-846)
VHF TUNER (BT-806)
TUNING ADJ
TUNER BIAS
BATTERY METER
POWER
S601 TV←OFF→RADIO
S201 TV BAND VHF-L ← VHF-H → UHF
+B ADJ
IC851 μPC574J
A-1295-265-A (US MODEL)
A-1295-266-A (CANADIAN MODEL)
P451 ORG YEL GRN → G board
P851 WHT YEL VIO
TEL ANT
J101 EXT ANT
R901 220
C903 0.001
RV951 100k TV TUNE
A board
P301
TV-----370mA
RADIO--64mA
WHT (GRY) RED WHT (GRY) WHT BRN BLU GRN YEL ORG RED
㊵⑫⑬㊴ ㊳㊲㊱㉟㉝ PL901 ⑮
Y board
G board
Z board
P101
RADIO 10mA
BRN RED ORG YEL WHT (GRY)
⑩ ⑥ ⑪ S101-1 ⑦ ⑨
W board
TV·RADIO MODE---12mA
TAPE RECODER MODE
(POWER SWITCH S601:OFF)
REC---------32mA
PB ▶---------12mA
FF ▶▶--------12mA
REW ◀◀-----12mA

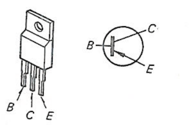
**2SA678**



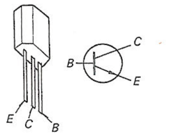
**2SA772**



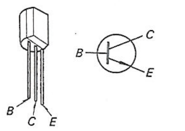
**2SA861**



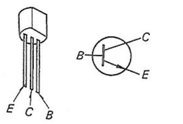
**2SC403C**
**2SC634A**



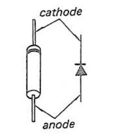
**2SC710**



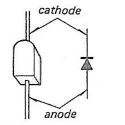
**2SC1364**
**2SC1474**
**2SC1475**
**2SC1674**



**1S1555**
**1T22**
**RD4.3E-B**


cathode
anode

**HF1A**
**HF1B**
**HF1C**
**HF1Z**


cathode
anode

Note:
- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- Voltages are taken under no-signal conditions in playback mode with VOM (20kΩ/V).
  { } : record mode

## 4-4. SCHEMATIC DIAGRAM

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

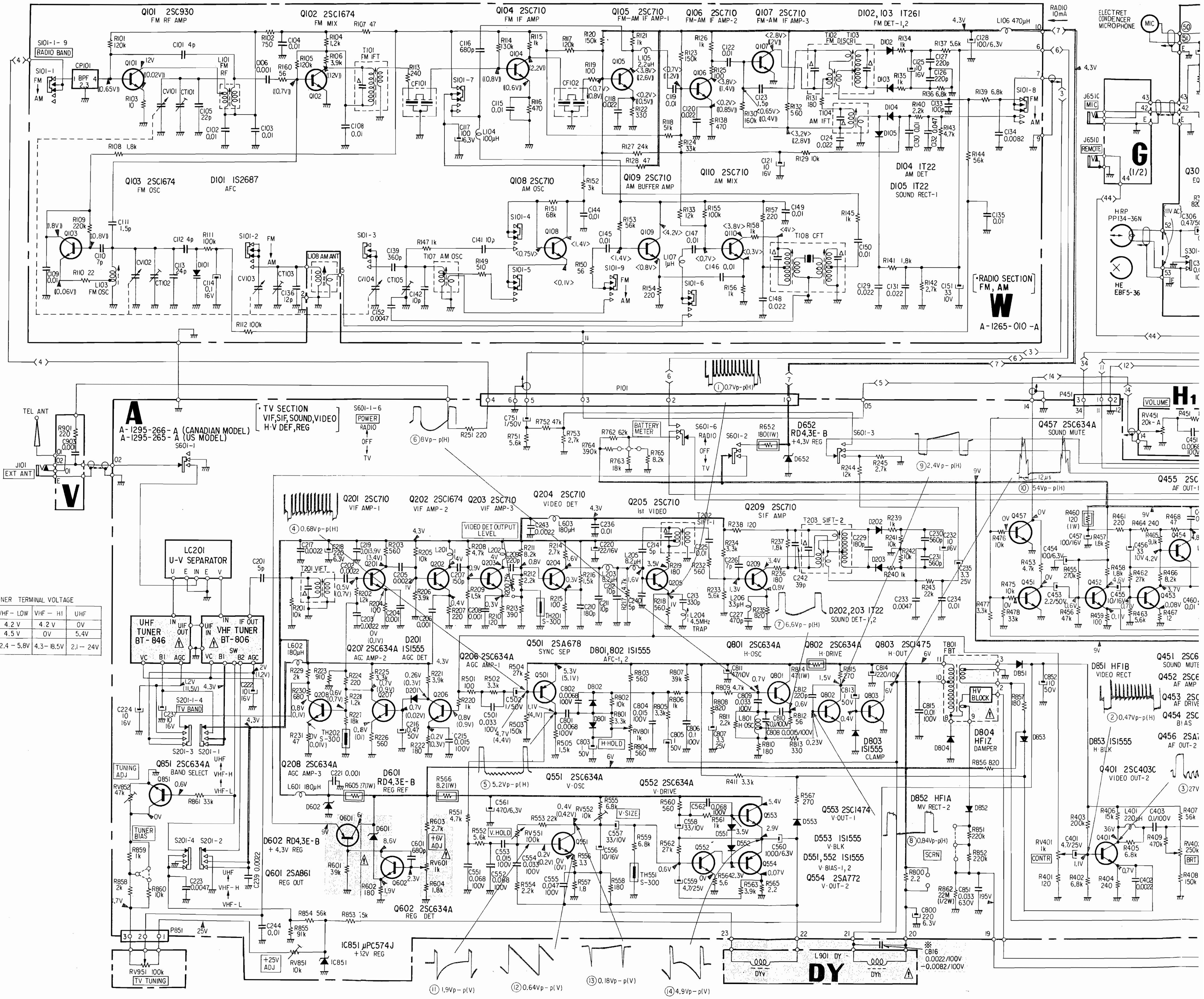
**Note:**

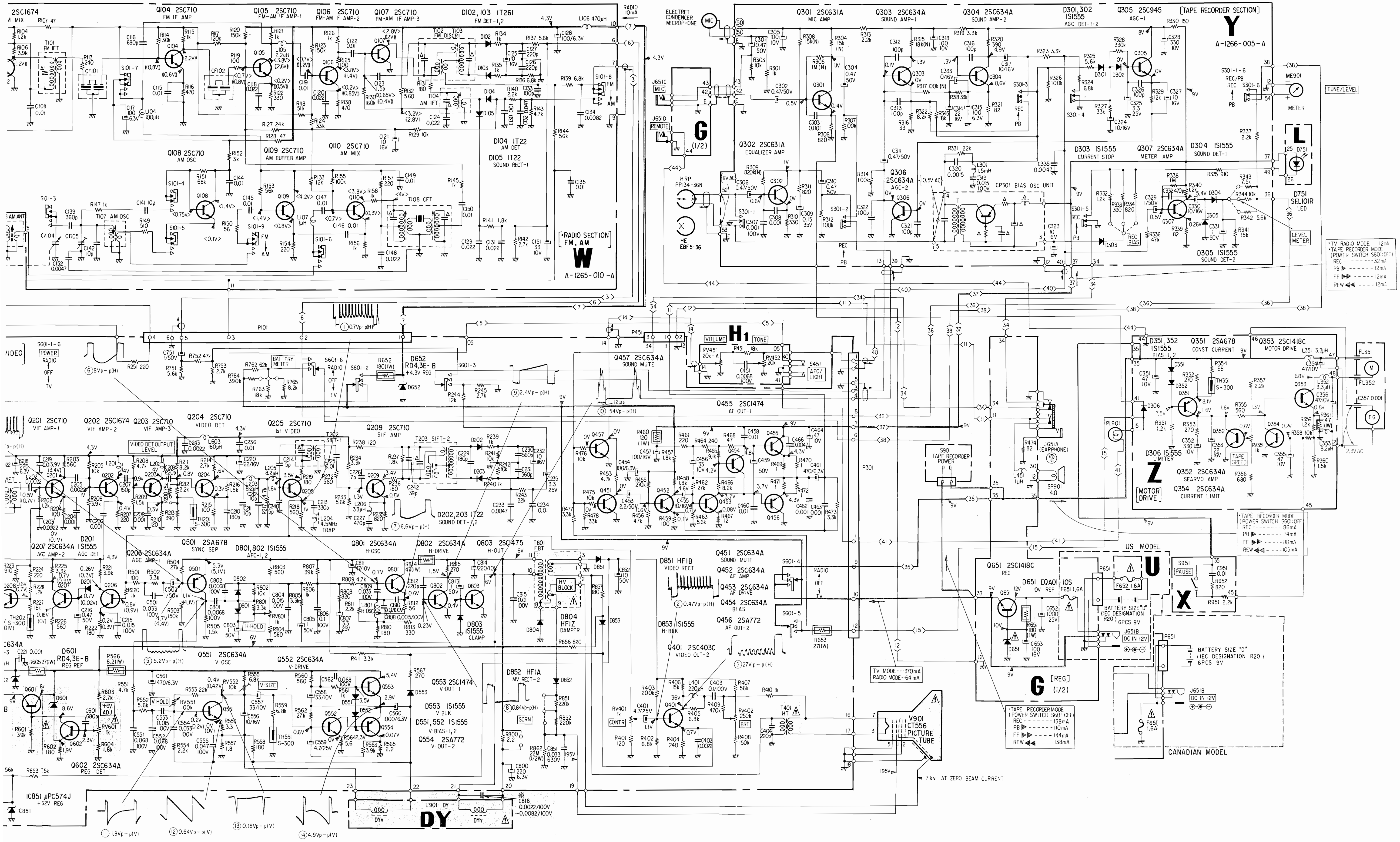
- All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μμF, elect : electrolytic
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- ▭ : nonflammable resistor.
- △ : internal component.
- ▭ : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Voltages are dc with respect to ground unless otherwise noted.
- ※ : selected to yield optimum performance.
- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- ━ : B+ bus.
- Readings are taken with a 20,000-ohm-per-volt VOM.
- Voltages in W board are taken under detuned conditions.
  (( )) : FM
  < > : AM
- Voltages in Y board are taken under no-signal conditions in playback mode.
  { } : record mode
- Voltages in A board are taken under tuned conditions with CONTR and BRIGHT controls set for best picture.
  ( ) : detuned conditions
- Voltage variations may be noted due to normal production tolerances.
- Switch

| Ref. No. | Description | Position |
|---|---|---|
| S101-1–9 | RADIO BAND | FM |
| S201-1–4 | TV BAND | VHF-L |
| S301-1–6 | REC/PB | PB |
| S451 | AFC/LIGHT | ON/OFF |
| S601-1–6 | POWER | OFF |
| S901 | TAPE RECORDER POWER | OFF |
| S951 | PAUSE | OFF |

VHF, UHF TUNER TERMINAL VOLTAGE

| TUNER | | VHF – LOW | VHF – HI | UHF |
|---|---|---|---|---|
| VHF | B2 | 4.2 V | 4.2 V | 0V |
| | SW | 4.5 V | 0V | 5.4V |
| VHF UHF | VC | 2.4 – 5.8V | 4.3 – 18.5V | 2.1 – 24V |


Q101 2SC930 FM RF AMP
Q102 2SC1674 FM MIX
Q103 2SC1674 FM OSC
D101 1S2687 AFC
Q104 2SC710 FM IF AMP
Q105 2SC710 FM-AM IF AMP-1
Q106 2SC710 FM-AM IF AMP-2
Q107 2SC710 FM-AM IF AMP-3
D102, 103 1T261 FM DET-1, 2
Q108 2SC710 AM OSC
Q109 2SC710 AM BUFFER AMP
Q110 2SC710 AM MIX
D104 1T22 AM DET
D105 1T22 SOUND RECT-1
RADIO SECTION FM, AM
W
A-1265-010-A
ELECTRET CONDENCER MICROPHONE
G (1/2)
HRP PP134-36N
HE EBF5-36
TEL ANT
J101 EXT ANT
V
A
A-1295-266-A (CANADIAN MODEL)
A-1295-265-A (US MODEL)
TV SECTION VIF, SIF, SOUND, VIDEO H·V DEF, REG
LC201 U-V SEPARATOR
UHF TUNER BT-846
VHF TUNER BT-806
Q201 2SC710 VIF AMP-1
Q202 2SC1674 VIF AMP-2
Q203 2SC710 VIF AMP-3
Q204 2SC710 VIDEO DET
Q205 2SC710 1st VIDEO
Q206 2SC634A AGC AMP-1
Q207 2SC634A AGC AMP-2
Q208 2SC634A AGC AMP-3
D201 1S1555 AGC DET
Q209 2SC710 SIF AMP
D202, 203 1T22 SOUND DET-1, 2
Q501 2SA678 SYNC SEP
D801, 802 1S1555 AFC-1, 2
Q801 2SC634A H·OSC
Q802 2SC634A H·DRIVE
Q803 2SC1475 H·OUT
D803 1S1555 CLAMP
Q551 2SC634A V·OSC
Q552 2SC634A V·DRIVE
Q553 2SC1474 V·OUT-1
D553 1S1555 V·BLK
D551, 552 1S1555 V·BIAS-1, 2
Q554 2SA772 V·OUT-2
D601 RD4.3E-B REG REF
D602 RD4.3E-B +4.3V REG
Q601 2SA861 REG OUT
Q602 2SC634A REG DET
D652 RD4.3E-B +4.3V REG
IC851 μPC574J +12V REG
D851 HF1B VIDEO RECT
D852 HF1A MV RECT-2
D853 1S1555 H·BLK
D804 HF1Z DAMPER
Q401 2SC403C VIDEO OUT-2
Q457 2SC634A SOUND MUTE
Q451 2SC
Q452 2SC AF AMP
Q453 2SC AF DRIVE
Q454 2SC BIAS
Q455 2SC AF OUT-1
Q456 2SA AF OUT-2
H1
DY
RV951 100k TV TUNING
RV401 1k CONTR
RV451 20k-A VOLUME
VIDEO DET OUTPUT LEVEL
BATTERY METER
T801 FBT
HV BLOCK
L901 DY
P101
P451
P851


RADIO SECTION FM, AM
W
A-1265-010-A
TAPE RECORDER SECTION
Y
A-1266-005-A
Q104 2SC710 FM IF AMP
Q105 2SC710 FM-AM IF AMP-1
Q106 2SC710 FM-AM IF AMP-2
Q107 2SC710 FM-AM IF AMP-3
D102,103 1T261 FM DET-1,2
Q108 2SC710 AM OSC
Q109 2SC710 AM BUFFER AMP
Q110 2SC710 AM MIX
D104 1T22 AM DET
D105 1T22 SOUND RECT-1
Q301 2SC631A MIC AMP
Q302 2SC631A EQUALIZER AMP
Q303 2SC634A SOUND AMP-1
Q304 2SC634A SOUND AMP-2
D301,302 1S1555 AGC DET-1-2
Q305 2SC945 AGC-1
Q306 2SC634A AGC-2
D303 1S1555 CURRENT STOP
Q307 2SC634A METER AMP
D304 1S1555 SOUND DET-1
D305 1S1555 SOUND DET-2
CP301 BIAS OSC UNIT
ELECTRET CONDENCER MICROPHONE
HRP PP134-36N
HE EBF5-36
ME901 METER
TUNE/LEVEL
D751 SELIOIR LED
LEVEL METER
L
G (1/2)
H1
VOLUME
TONE
AFC/LIGHT
Q457 2SC634A SOUND MUTE
Q455 2SC1474 AF OUT-1
Q451 2SC634A SOUND MUTE
Q452 2SC634A AF AMP
Q453 2SC634A AF DRIVE
Q454 2SC634A BIAS
Q456 2SA772 AF OUT-2
Q401 2SC403C VIDEO OUT-2
D851 HF1B VIDEO RECT
D853 1S1555 H-BLK
D351,352 1S1555 BIAS-1,2
Q351 2SA678 CONST CURRENT
Q353 2SC1418C MOTOR DRIVE
D306 1S1555 LIMITER
Q352 2SC634A SEARVO AMP
Q354 2SC634A CURRENT LIMIT
Z
MOTOR DRIVE
TAPE SPEED
Q651 2SC1418C REG
D651 EQA01-10S 10V REF
G [REG] (1/2)
U
US MODEL
X
S951 PAUSE
CANADIAN MODEL
BATTERY SIZE "D" (IEC DESIGNATION R20) 6PCS 9V
J651B DC IN 12V
S901 TAPE RECORDER POWER
J651A (EARPHONE)
SP901 4Ω
V901 CT556 PICTURE TUBE
T401 HT
7kv AT ZERO BEAM CURRENT
TV MODE---370mA RADIO MODE--64 mA
•TV RADIO MODE 12mA
•TAPE RECORDER MODE (POWER SWITCH S601:OFF)
REC ---------32mA
PB ▶---------12mA
FF ▶▶--------12mA
REW ◀◀--------12mA
•TAPE RECORDER MODE (POWER SWITCH S601:OFF)
REC ---------86mA
PB ▶---------74mA
FF ▶▶--------110mA
REW ◀◀--------105mA
•TAPE RECORDER MODE (POWER SWITCH S601 OFF)
REC ---------138mA
PB ▶---------110mA
FF ▶▶--------144mA
REW ◀◀--------138mA
P101
P301
S601-1-6 POWER RADIO OFF TV
BATTERY METER
D652 RD4.3E-B +4.3V REG
Q201 2SC710 VIF AMP-1
Q202 2SC1674 VIF AMP-2
Q203 2SC710 VIF AMP-3
Q204 2SC710 VIDEO DET
VIDEO DET OUTPUT LEVEL
Q205 2SC710 1st VIDEO
Q209 2SC710 SIF AMP
T203 SIFT-2
D202,203 1T22 SOUND DET-1,2
Q207 2SC634A 1S1555 AGC AMP-2 AGC DET
Q206 2SC634A AGC AMP-1
D201 1S1555
Q501 2SA678 SYNC SEP
D801,802 1S1555 AFC-1,2
Q801 2SC634A H-OSC
Q802 2SC634A H-DRIVE
Q803 2SC1475 H-OUT
T801 FBT
HV BLOCK
D804 HF1Z DAMPER
D803 1S1555 CLAMP
H-HOLD
Q551 2SC634A V-OSC
Q552 2SC634A V-DRIVE
Q553 2SC1474 V-OUT-1
D553 1S1555 V-BLK
D551,552 1S1555 V-BIAS-1,2
Q554 2SA772 V-OUT-2
V.HOLD
V-SIZE
D852 HF1A MV RECT-2
SCRN
BRT
CONTR
D601 RD4.3E-B REG REF
Q601
Q602 2SC634A REG DET
+6V ADJ
IC851 μPC574J +32V REG
L901 DY
DY
DYv
DYh
① 0.7Vp-p(H)
② 0.47Vp-p(H)
③ 27Vp-p(H)
⑤ 5.2Vp-p(H)
⑥ 8Vp-p(H)
⑦ 6.6Vp-p(H)
⑧ 0.84Vp-p(H)
⑨ 2.4Vp-p(H)
⑩ 54Vp-p(H)
⑪ 1.9Vp-p(V)
⑫ 0.64Vp-p(V)
⑬ 0.18Vp-p(V)
⑭ 4.9Vp-p(V)

## 1/4 WATT CARBON RESISTORS

| Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. | Ω | Part No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 1-246-401-00 | 10 | 1-246-425-00 | 100 | 1-246-449-00 | 1.0k | 1-246-473-00 | 10k | 1-246-497-00 | 100k | 1-246-521-00 | 1.0M | 1-246-545-00 |
| 1.1 | 1-246-402-00 | 11 | 1-246-426-00 | 110 | 1-246-450-00 | 1.1k | 1-246-474-00 | 11k | 1-246-498-00 | 110k | 1-246-522-00 | 1.1M | 1-210-814-00 |
| 1.2 | 1-246-403-00 | 12 | 1-246-427-00 | 120 | 1-246-451-00 | 1.2k | 1-246-475-00 | 12k | 1-246-499-00 | 120k | 1-246-523-00 | 1.2M | 1-210-815-00 |
| 1.3 | 1-246-404-00 | 13 | 1-246-428-00 | 130 | 1-246-452-00 | 1.3k | 1-246-576-00 | 13k | 1-246-500-00 | 130k | 1-246-524-00 | 1.3M | 1-210-816-00 |
| 1.5 | 1-246-405-00 | 15 | 1-246-429-00 | 150 | 1-246-453-00 | 1.5k | 1-246-577-00 | 15k | 1-246-501-00 | 150k | 1-246-525-00 | 1.5M | 1-210-817-00 |
| 1.6 | 1-246-406-00 | 16 | 1-246-430-00 | 160 | 1-246-454-00 | 1.6k | 1-246-578-00 | 16k | 1-246-502-00 | 160k | 1-246-526-00 | 1.6M | 1-210-818-00 |
| 1.8 | 1-246-407-00 | 18 | 1-246-431-00 | 180 | 1-246-455-00 | 1.8k | 1-246-579-00 | 18k | 1-246-503-00 | 180k | 1-246-527-00 | 1.8M | 1-210-819-00 |
| 2.0 | 1-246-408-00 | 20 | 1-246-432-00 | 200 | 1-246-456-00 | 2.0k | 1-246-580-00 | 20k | 1-246-504-00 | 200k | 1-246-528-00 | 2.0M | 1-210-820-00 |
| 2.2 | 1-246-409-00 | 22 | 1-246-433-00 | 220 | 1-246-457-00 | 2.2k | 1-246-581-00 | 22k | 1-246-505-00 | 220k | 1-246-529-00 | 2.2M | 1-210-821-00 |
| 2.4 | 1-246-410-00 | 24 | 1-246-434-00 | 240 | 1-246-458-00 | 2.4k | 1-246-582-00 | 24k | 1-246-506-00 | 240k | 1-246-530-00 | 2.4M | 1-244-754-00 |
| 2.7 | 1-246-411-00 | 27 | 1-246-435-00 | 270 | 1-246-459-00 | 2.7k | 1-246-583-00 | 27k | 1-246-507-00 | 270k | 1-246-531-00 | 2.7M | 1-244-755-00 |
| 3.0 | 1-246-412-00 | 30 | 1-246-436-00 | 300 | 1-246-460-00 | 3.0k | 1-246-584-00 | 30k | 1-246-508-00 | 300k | 1-246-532-00 | 3.0M | 1-244-756-00 |
| 3.3 | 1-246-413-00 | 33 | 1-246-437-00 | 330 | 1-246-461-00 | 3.3k | 1-246-585-00 | 33k | 1-246-509-00 | 330k | 1-246-533-00 | 3.3M | 1-244-757-00 |
| 3.6 | 1-246-414-00 | 36 | 1-246-438-00 | 360 | 1-246-462-00 | 3.6k | 1-246-586-00 | 36k | 1-246-510-00 | 360k | 1-246-534-00 | 3.6M | 1-244-758-00 |
| 3.9 | 1-246-415-00 | 39 | 1-246-439-00 | 390 | 1-246-463-00 | 3.9k | 1-246-587-00 | 39k | 1-246-511-00 | 390k | 1-246-535-00 | 3.9M | 1-244-759-00 |
| 4.3 | 1-246-416-00 | 43 | 1-246-440-00 | 430 | 1-246-464-00 | 4.3k | 1-246-488-00 | 43k | 1-246-512-00 | 430k | 1-246-536-00 | 4.3M | 1-244-760-00 |
| 4.7 | 1-246-417-00 | 47 | 1-246-441-00 | 470 | 1-246-465-00 | 4.7k | 1-246-489-00 | 47k | 1-246-513-00 | 470k | 1-246-537-00 | 4.7M | 1-244-761-00 |
| 5.1 | 1-246-418-00 | 51 | 1-246-442-00 | 510 | 1-246-466-00 | 5.1k | 1-246-490-00 | 51k | 1-246-514-00 | 510k | 1-246-538-00 | 5.1M | 1-244-762-00 |
| 5.6 | 1-246-419-00 | 56 | 1-246-443-00 | 560 | 1-246-467-00 | 5.6k | 1-246-491-00 | 56k | 1-246-515-00 | 560k | 1-246-539-00 | | |
| 6.2 | 1-246-420-00 | 62 | 1-246-444-00 | 620 | 1-246-468-00 | 6.2k | 1-246-492-00 | 62k | 1-246-516-00 | 620k | 1-246-540-00 | | |
| 6.8 | 1-246-421-00 | 68 | 1-246-445-00 | 680 | 1-246-469-00 | 6.8k | 1-246-493-00 | 68k | 1-246-517-00 | 680k | 1-246-541-00 | | |
| 7.5 | 1-246-422-00 | 75 | 1-246-446-00 | 750 | 1-246-470-00 | 7.5k | 1-246-494-00 | 75k | 1-246-518-00 | 750k | 1-246-542-00 | | |
| 8.2 | 1-246-423-00 | 82 | 1-246-447-00 | 820 | 1-246-471-00 | 8.2k | 1-246-495-00 | 82k | 1-246-519-00 | 820k | 1-246-543-00 | | |
| 9.1 | 1-246-424-00 | 91 | 1-246-448-00 | 910 | 1-246-472-00 | 9.1k | 1-246-496-00 | 91k | 1-246-520-00 | 910k | 1-246-544-00 | | |

## HARDWARE NOMENCLATURE

**Screw:** – P 3 x 10

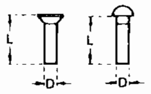
L: *Length in mm*

D: *Diameter in mm*

*Type of head*

*Indicated slotted-head only.*

*Unless otherwise indicated, it means cross-recessed head (Phillips type).*



| Reference Designation | Shape | Description | Remarks |
|---|---|---|---|
| **SCREWS** | | | |
| P | | pan-head screw | binding-head (B) screw for replacement |
| PWH | | pan-head screw with washer face | binding-head (B) screw and flat washer for replacement |
| PS<br>PSP | | pan-head screw with spring washer | binding-head (B) screw and spring washer for replacement |
| PSW<br>PSPW | | pan-head screw with spring and flat washers | binding-head (B) screw and spring and flat washers for replacement |
| R | | round-head screw | binding-head (B) screw for replacement |
| K | | flat-countersunk-head screw | |
| RK | | oval-countersunk-head screw | |
| B | | binding-head screw | |
| T | | truss-head screw | binding-head (B) screw for replacement |
| F | | flat-fillister-head screw | |
| RF | | fillister-head screw | |
| BV | | braizer-head screw | |

**Nut, Washer, Retaining ring:**

N 3

*Diameter of usable screw or shaft*

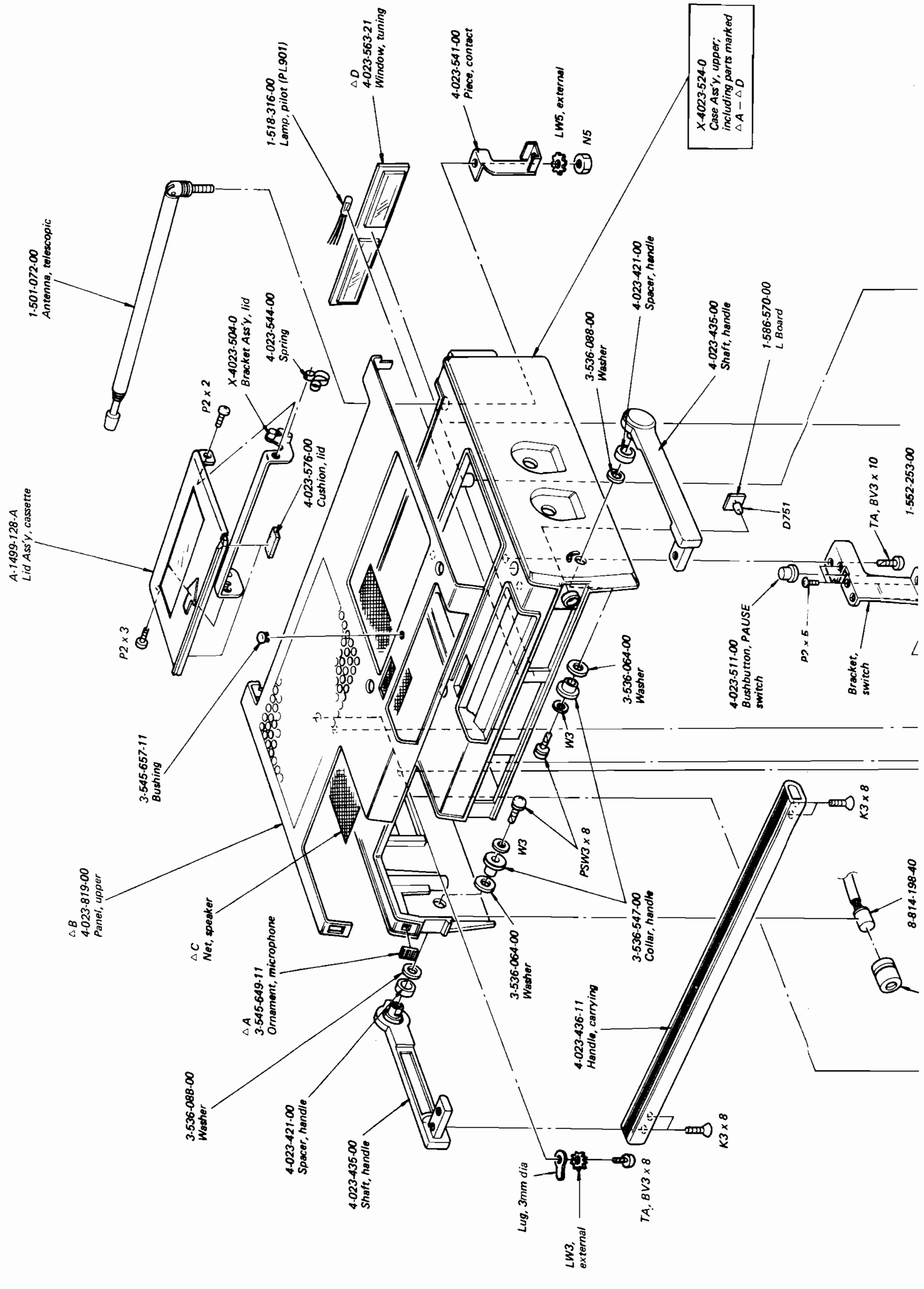
*Reference designation*

| Reference Designation | Shape | Description | Remarks |
|---|---|---|---|
| **SELF-TAPPING SCREWS** | | | |
| TA | | self-tapping screw | ex: TA, P 3 x 10 |
| PTP | | pan-head self-tapping screw | binding-head self-tapping (TA, B) screw for replacement |
| PTPWH | | pan-head self-tapping screw with washer face | binding-head self tapping (TA, B) screw and flat washer for replacement |
| PTTWH | | pan-head thread-rolling screw with washer face | binding-head (B) screw and flat washer for replacement |
| **SET SCREWS** | | | |
| SC | | set screw | |
| SC | | hexagon-socket set screw | ex: SC 2.6 x 4, hexagon socket |
| **NUT** | | | |
| N | | nut | |
| **WASHERS** | | | |
| W | ◎ | flat washer | |
| SW | | spring washer | |
| LW | | internal-tooth lock washer | ex: LW3, internal |
| LW | | external-tooth lock washer | ex: LW3, external |
| **RETAINING RINGS** | | | |
| E | | retaining ring | |
| G | | grip-type retaining ring | |

# SECTION 5
# EXPLODED VIEWS

(1)

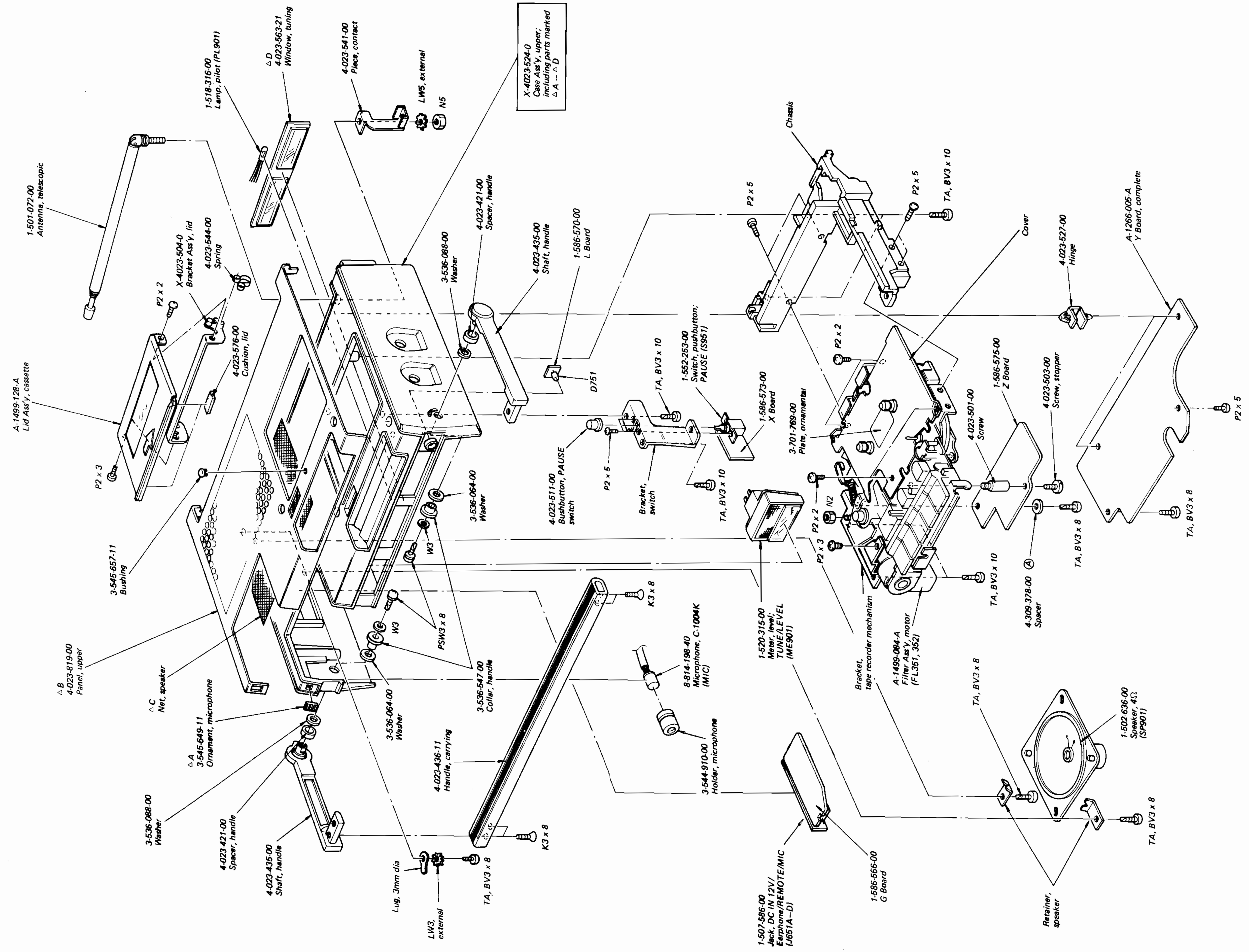
Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.


1-501-072-00
Antenna, telescopic
1-518-316-00
Lamp, pilot (PL901)
△D
4-023-563-21
Window, tuning
4-023-541-00
Piece, contact
LW5, external
N5
X-4023-524-0
Case Ass'y, upper;
including parts marked
△A – △D
P2 x 2
X-4023-504-0
Bracket Ass'y, lid
4-023-544-00
Spring
3-536-088-00
Washer
4-023-421-00
Spacer, handle
4-023-435-00
Shaft, handle
1-586-570-00
L Board
D751
TA, BV3 x 10
1-552-253-00
A-1499-128-A
Lid Ass'y, cassette
4-023-576-00
Cushion, lid
P2 x 3
3-545-657-11
Bushing
3-536-064-00
Washer
4-023-511-00
Bushbutton, PAUSE
switch
P2 x 5
Bracket,
switch
W3
PSW3 x 8
W3
K3 x 8
△B
4-023-819-00
Panel, upper
△C
Net, speaker
△A
3-545-649-11
Ornament, microphone
3-536-064-00
Washer
3-536-547-00
Collar, handle
8-814-198-40
3-536-088-00
Washer
4-023-421-00
Spacer, handle
4-023-435-00
Shaft, handle
4-023-436-11
Handle, carrying
K3 x 8
Lug, 3mm dia
LW3,
external
TA, BV3 x 8
E
D
C
B
A
1
2
3
4

## SECTION 5
## EXPLODED VIEWS

(1)

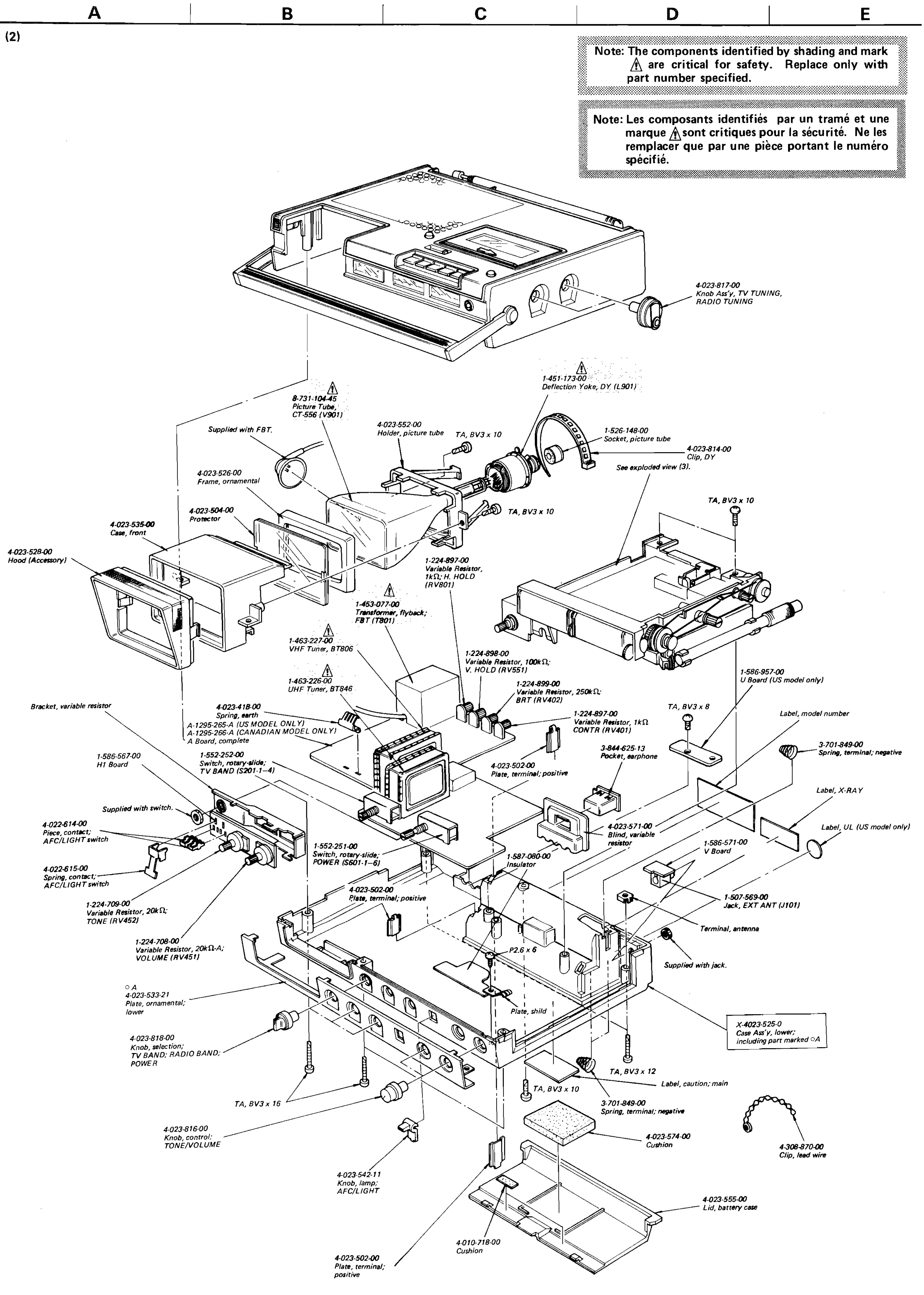
Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.


E
D
C
B
A
1
2
3
4
5
6
7
8
1-501-072-00
Antenna, telescopic
1-518-316-00
Lamp, pilot (PL901)
△D
4-023-563-21
Window, tuning
4-023-541-00
Piece, contact
LW5, external
N5
X-4023-524-0
Case Ass'y, upper;
including parts marked
△A – △D
P2 x 2
X-4023-504-0
Bracket Ass'y, lid
4-023-544-00
Spring
A-1499-128-A
Lid Ass'y, cassette
4-023-576-00
Cushion, lid
P2 x 3
3-545-657-11
Bushing
△B
4-023-819-00
Panel, upper
△C
Net, speaker
△A
3-545-649-11
Ornament, microphone
3-536-088-00
Washer
4-023-421-00
Spacer, handle
4-023-435-00
Shaft, handle
Lug, 3mm dia
LW3,
external
TA, BV3 x 8
3-536-064-00
Washer
4-023-436-11
Handle, carrying
K3 x 8
K3 x 8
3-536-547-00
Collar, handle
W3
W3
PSW3 x 8
3-536-064-00
Washer
3-536-088-00
Washer
4-023-421-00
Spacer, handle
4-023-435-00
Shaft, handle
1-586-570-00
L Board
D751
4-023-511-00
Bushbutton, PAUSE
switch
P2 x 5
Bracket,
switch
TA, BV3 x 10
1-552-253-00
Switch, pushbutton;
PAUSE (S951)
TA, BV3 x 10
1-586-573-00
X Board
8-814-198-40
Microphone, C-1004K
(MIC)
3-544-910-00
Holder, microphone
1-520-315-00
Meter, level;
TUNE/LEVEL
(ME901)
1-507-586-00
Jack, DC IN 12V/
Earphone/REMOTE/MIC
(J651A–D)
1-586-566-00
G Board
Chassis
P2 x 5
P2 x 5
TA, BV3 x 10
P2 x 2
3-701-769-00
Plate, ornamental
P2 x 2
N2
P2 x 3
Bracket,
tape recorder mechanism
A-1499-084-A
Filter Ass'y, motor
(FL351, 352)
TA, BV3 x 10
Cover
4-023-501-00
Screw
1-586-575-00
Z Board
4-023-503-00
Screw, stopper
4-023-527-00
Hinge
A-1266-005-A
Y Board, complete
P2 x 5
TA, BV3 x 8
TA, BV3 x 8
Ⓐ
4-309-378-00
Spacer
TA, BV3 x 8
1-502-636-00
Speaker, 4Ω
(SP901)
TA, BV3 x 8
Retainer,
speaker

(2)

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**


A
B
C
D
E
1
2
3
4
5
6
7
8
4-023-817-00
Knob Ass'y, TV TUNING, RADIO TUNING
⚠ 1-451-173-00
Deflection Yoke, DY (L901)
⚠ 8-731-104-45
Picture Tube, CT-556 (V901)
4-023-552-00
Holder, picture tube
TA, BV3 x 10
1-526-148-00
Socket, picture tube
4-023-814-00
Clip, DY
See exploded view (3).
Supplied with FBT.
4-023-526-00
Frame, ornamental
4-023-504-00
Protector
TA, BV3 x 10
TA, BV3 x 10
4-023-535-00
Case, front
4-023-528-00
Hood (Accessory)
1-224-897-00
Variable Resistor, 1kΩ; H. HOLD (RV801)
⚠ 1-453-077-00
Transformer, flyback; FBT (T801)
⚠ 1-463-227-00
VHF Tuner, BT806
1-224-898-00
Variable Resistor, 100kΩ; V. HOLD (RV551)
⚠ 1-463-226-00
UHF Tuner, BT846
1-224-899-00
Variable Resistor, 250kΩ; BRT (RV402)
1-586-957-00
U Board (US model only)
Bracket, variable resistor
4-023-418-00
Spring, earth
A-1295-265-A (US MODEL ONLY)
A-1295-266-A (CANADIAN MODEL ONLY)
A Board, complete
1-224-897-00
Variable Resistor, 1kΩ CONTR (RV401)
TA, BV3 x 8
Label, model number
1-586-567-00
H1 Board
1-552-252-00
Switch, rotary-slide; TV BAND (S201-1-4)
3-844-625-13
Pocket, earphone
4-023-502-00
Plate, terminal; positive
3-701-849-00
Spring, terminal; negative
Label, X-RAY
Supplied with switch.
4-022-614-00
Piece, contact; AFC/LIGHT switch
4-023-571-00
Blind, variable resistor
Label, UL (US model only)
1-552-251-00
Switch, rotary-slide; POWER (S601-1-6)
1-587-080-00
Insulator
1-586-571-00
V Board
4-022-615-00
Spring, contact; AFC/LIGHT switch
4-023-502-00
Plate, terminal; positive
1-507-569-00
Jack, EXT ANT (J101)
1-224-709-00
Variable Resistor, 20kΩ; TONE (RV452)
Terminal, antenna
1-224-708-00
Variable Resistor, 20kΩ-A; VOLUME (RV451)
P2.6 x 6
Supplied with jack.
○A
4-023-533-21
Plate, ornamental; lower
Plate, shield
X-4023-525-0
Case Ass'y, lower; including part marked ○A
4-023-818-00
Knob, selection; TV BAND; RADIO BAND; POWER
TA, BV3 x 12
Label, caution; main
TA, BV3 x 10
TA, BV3 x 16
3-701-849-00
Spring, terminal; negative
4-023-574-00
Cushion
4-308-870-00
Clip, lead wire
4-023-816-00
Knob, control; TONE/VOLUME
4-023-542-11
Knob, lamp; AFC/LIGHT
4-023-555-00
Lid, battery case
4-010-718-00
Cushion
4-023-502-00
Plate, terminal; positive

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

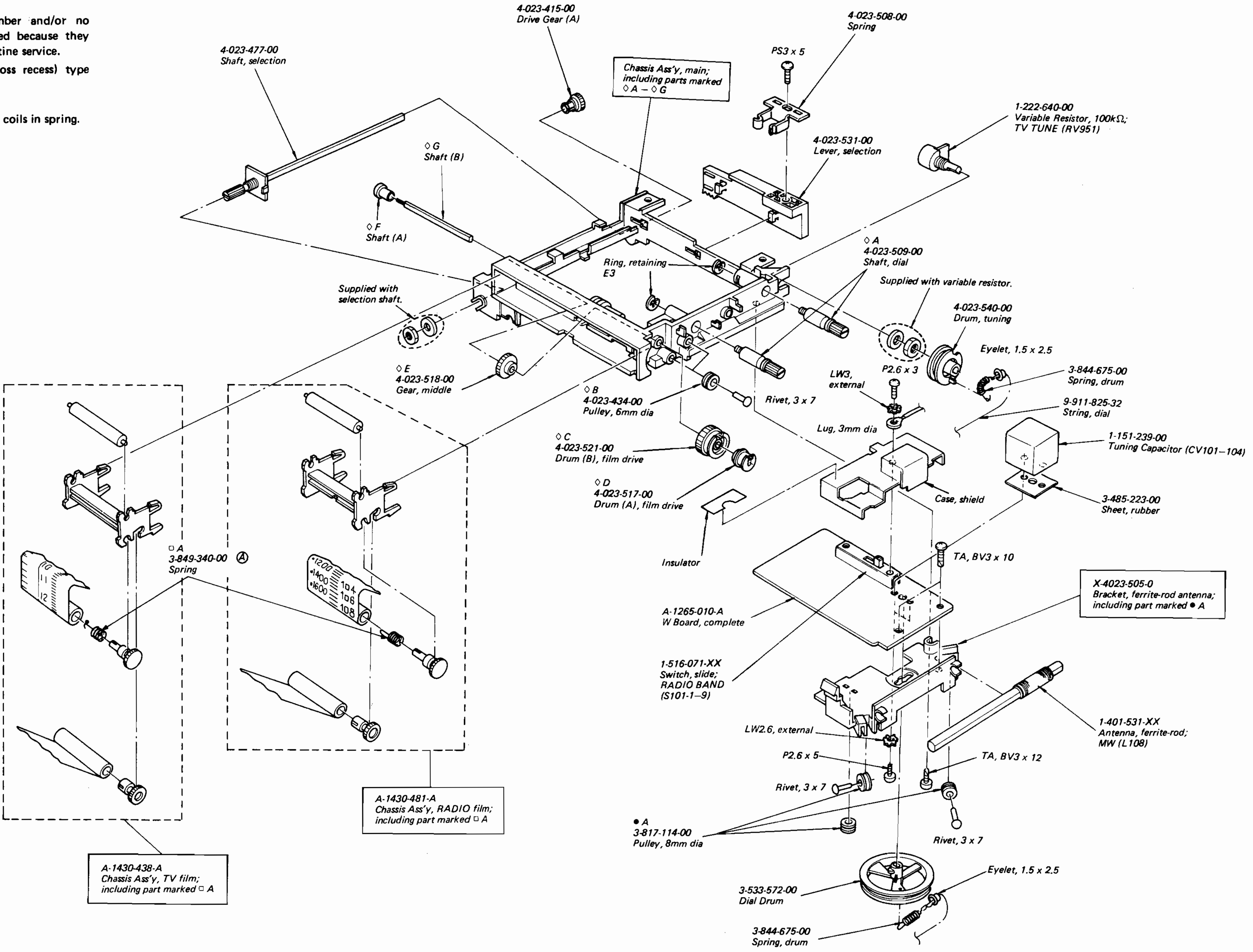
A B C D E F G H

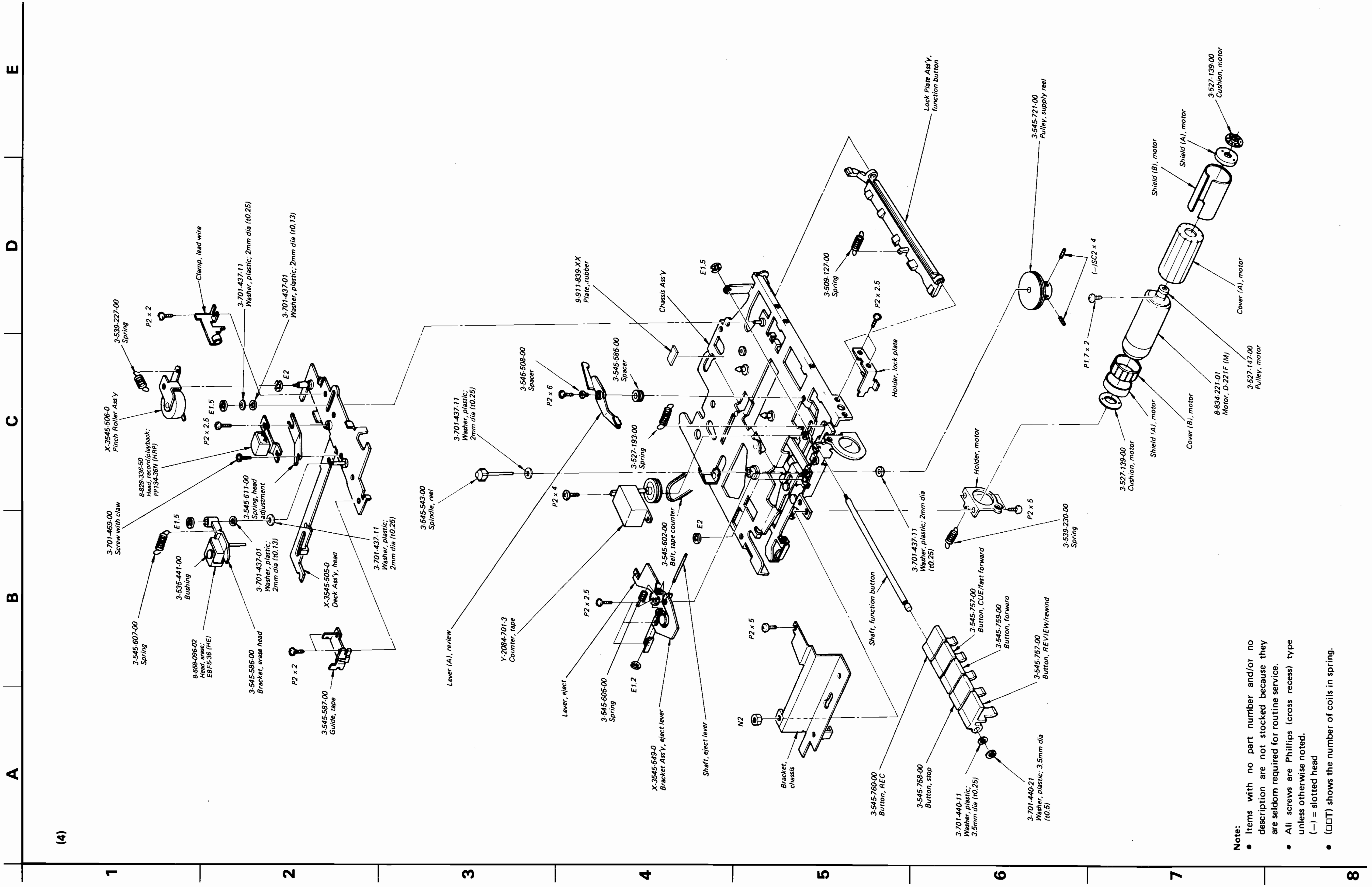
1 2 3 4 5

(3)

Note:

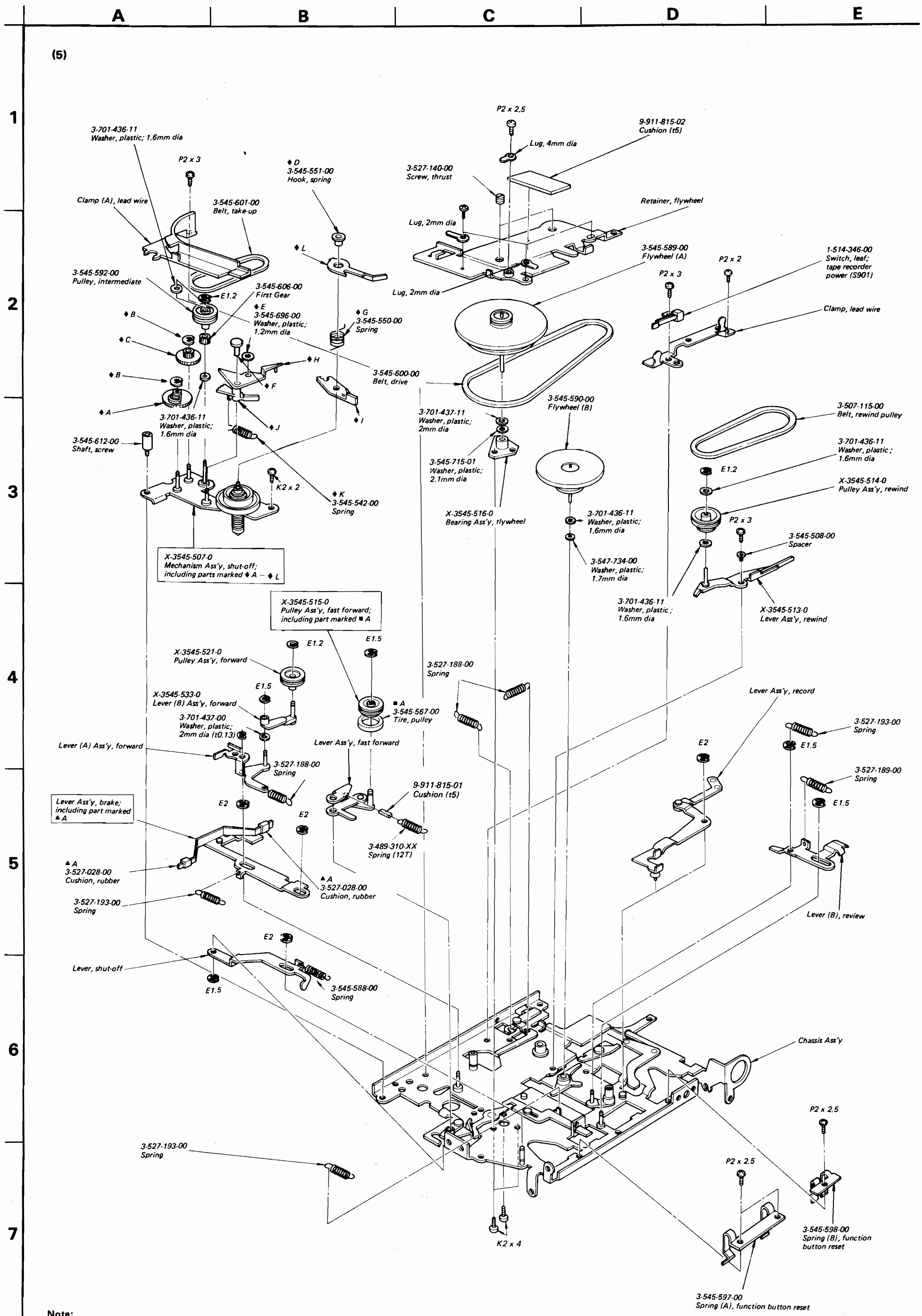
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.


4-023-415-00
Drive Gear (A)
4-023-508-00
Spring
PS3 x 5
Chassis Ass'y, main; including parts marked ◊A – ◊G
4-023-477-00
Shaft, selection
1-222-640-00
Variable Resistor, 100kΩ;
TV TUNE (RV951)
4-023-531-00
Lever, selection
◊G
Shaft (B)
◊F
Shaft (A)
◊A
4-023-509-00
Shaft, dial
Ring, retaining
E3
Supplied with variable resistor.
4-023-540-00
Drum, tuning
Supplied with selection shaft.
Eyelet, 1.5 x 2.5
◊E
4-023-518-00
Gear, middle
◊B
4-023-434-00
Pulley, 6mm dia
P2.6 x 3
LW3, external
3-844-675-00
Spring, drum
9-911-825-32
String, dial
Rivet, 3 x 7
Lug, 3mm dia
◊C
4-023-521-00
Drum (B), film drive
◊D
4-023-517-00
Drum (A), film drive
1-151-239-00
Tuning Capacitor (CV101–104)
Case, shield
3-485-223-00
Sheet, rubber
□A
3-849-340-00 Ⓐ
Spring
10
11
12
1200
1400
1600
104
106
108
Insulator
TA, BV3 x 10
X-4023-505-0
Bracket, ferrite-rod antenna; including part marked ● A
A-1265-010-A
W Board, complete
1-516-071-XX
Switch, slide;
RADIO BAND
(S101-1–9)
1-401-531-XX
Antenna, ferrite-rod;
MW (L108)
LW2.6, external
P2.6 x 5
TA, BV3 x 12
Rivet, 3 x 7
A-1430-481-A
Chassis Ass'y, RADIO film; including part marked □ A
●A
3-817-114-00
Pulley, 8mm dia
Rivet, 3 x 7
A-1430-438-A
Chassis Ass'y, TV film; including part marked □ A
Eyelet, 1.5 x 2.5
3-533-572-00
Dial Drum
3-844-675-00
Spring, drum


E
D
C
B
A
1
2
3
4
5
6
7
8
(4)
3-539-227-00
Spring
P2 x 2
Clamp, lead wire
3-701-437-11
Washer, plastic; 2mm dia (t0.25)
3-701-437-01
Washer, plastic; 2mm dia (t0.13)
X-3545-506-0
Pinch Roller Ass'y
E1.5
E2
P2 x 2.5
8-829-336-50
Head, record/playback;
PP134-36N (HRP)
3-701-469-00
Screw with claw
3-545-611-00
Spring, head
adjustment
E1.5
3-535-441-00
Bushing
3-701-437-01
Washer, plastic;
2mm dia (t0.13)
X-3545-505-0
Deck Ass'y, head
3-701-437-11
Washer, plastic;
2mm dia (t0.25)
3-545-607-00
Spring
8-659-096-02
Head, erase;
EBF5-36 (HE)
3-545-586-00
Bracket, erase head
P2 x 2
3-545-587-00
Guide, tape
3-701-437-11
Washer, plastic;
2mm dia (t0.25)
3-545-543-00
Spindle, reel
Lever (A), review
Y-2084-701-3
Counter, tape
3-545-508-00
Spacer
P2 x 6
3-545-585-00
Spacer
3-527-193-00
Spring
P2 x 4
3-545-602-00
Belt, tape counter
E2
P2 x 2.5
Lever, eject
3-545-605-00
Spring
E1.2
X-3545-549-0
Bracket Ass'y, eject lever
Shaft, eject lever
9-911-839-XX
Plate, rubber
Chassis Ass'y
E1.5
P2 x 5
N2
Bracket,
chassis
3-509-127-00
Spring
P2 x 2.5
Lock Plate Ass'y,
function button
Holder, lock plate
Shaft, function button
3-701-437-11
Washer, plastic; 2mm dia
(t0.25)
3-545-760-00
Button, REC
3-545-758-00
Button, stop
3-701-440-11
Washer, plastic;
3.5mm dia (t0.25)
3-701-440-21
Washer, plastic; 3.5mm dia
(t0.5)
3-545-757-00
Button, CUE/fast forward
3-545-759-00
Button, forward
3-545-757-00
Button, REVIEW/rewind
3-545-721-00
Pulley, supply reel
(–)SC2 x 4
P1.7 x 2
Holder, motor
P2 x 5
3-539-230-00
Spring
3-527-139-00
Cushion, motor
Shield (A), motor
Cover (B), motor
8-834-221-01
Motor, D-221F (M)
3-527-147-00
Pulley, motor
Cover (A), motor
Shield (B), motor
Shield (A), motor
3-527-139-00
Cushion, motor

**Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

(5)


A
B
C
D
E
1
2
3
4
5
6
7
3-701-436-11
Washer, plastic; 1.6mm dia
P2 x 3
Clamp (A), lead wire
3-545-601-00
Belt, take-up
3-545-592-00
Pulley, intermediate
E1.2
3-545-606-00
First Gear
◆E
3-545-696-00
Washer, plastic; 1.2mm dia
◆B
◆C
◆B
◆A
3-701-436-11
Washer, plastic; 1.6mm dia
3-545-612-00
Shaft, screw
◆D
3-545-551-00
Hook, spring
◆L
◆G
3-545-550-00
Spring
◆H
◆F
◆J
◆I
3-545-600-00
Belt, drive
K2 x 2
◆K
3-545-542-00
Spring
X-3545-507-0
Mechanism Ass'y, shut-off; including parts marked ◆A – ◆L
P2 x 2.5
Lug, 4mm dia
9-911-815-02
Cushion (t5)
3-527-140-00
Screw, thrust
Retainer, flywheel
Lug, 2mm dia
Lug, 2mm dia
3-545-589-00
Flywheel (A)
3-701-437-11
Washer, plastic; 2mm dia
3-545-715-01
Washer, plastic; 2.1mm dia
X-3545-516-0
Bearing Ass'y, flywheel
3-545-590-00
Flywheel (B)
3-701-436-11
Washer, plastic; 1.6mm dia
3-547-734-00
Washer, plastic; 1.7mm dia
3-701-436-11
Washer, plastic; 1.6mm dia
P2 x 3
P2 x 2
1-514-346-00
Switch, leaf; tape recorder power (S901)
Clamp, lead wire
3-507-115-00
Belt, rewind pulley
3-701-436-11
Washer, plastic; 1.6mm dia
E1.2
X-3545-514-0
Pulley Ass'y, rewind
P2 x 3
3-545-508-00
Spacer
X-3545-513-0
Lever Ass'y, rewind
X-3545-515-0
Pulley Ass'y, fast forward; including part marked ■A
E1.2
E1.5
X-3545-521-0
Pulley Ass'y, forward
E1.5
X-3545-533-0
Lever (B) Ass'y, forward
3-701-437-00
Washer, plastic; 2mm dia (t0.13)
■A
3-545-567-00
Tire, pulley
Lever Ass'y, fast forward
Lever (A) Ass'y, forward
3-527-188-00
Spring
3-527-188-00
Spring
9-911-815-01
Cushion (t5)
3-489-310-XX
Spring (12T)
Lever Ass'y, brake; including part marked ▲A
E2
E2
▲A
3-527-028-00
Cushion, rubber
▲A
3-527-028-00
Cushion, rubber
3-527-193-00
Spring
Lever Ass'y, record
E2
3-527-193-00
Spring
E1.5
3-527-189-00
Spring
E1.5
Lever (B), review
E2
Lever, shut-off
E1.5
3-545-588-00
Spring
Chassis Ass'y
3-527-193-00
Spring
P2 x 2.5
P2 x 2.5
K2 x 4
3-545-598-00
Spring (B), function button reset
3-545-597-00
Spring (A), function button reset

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

# SECTION 6
# ELECTRICAL PARTS LIST

| *Ref. No.* | *Part No.* | *Description* |
|---|---|---|
| | **TUNERS AND CIRCUIT BOARDS** | |
| | ⚠1-463-226-00 | UHF Tuner, BT-846 |
| | ⚠1-463-227-00 | VHF Tuner, BT-806 |
| | 1-586-566-00 | G Board |
| | 1-586-567-00 | H1 Board |
| | 1-586-570-00 | L Board |
| | 1-586-571-00 | V Board |
| | 1-586-573-00 | X Board |
| | 1-586-575-00 | Z Board |
| | 1-586-957-00 | U Board (US model) |
| | A-1265-010-A | W Board, complete |
| | A-1266-005-A | Y Board, complete |
| | A-1295-265-A | A Board, complete (US model) |
| | A-1295-266-A | A Board, complete (Canadian model) |
| | **SEMICONDUCTORS** | |
| | **Transistors** | |
| Q101 | 8-729-803-04 | 2SC930 |
| ⇒Q102, 103 | 8-729-663-47 | 2SC1364 |
| Q104–110 | 8-729-671-14 | 2SC710 |
| Q201 | 8-729-671-14 | 2SC710 |
| ⇒Q202 | 8-729-663-47 | 2SC1364 |
| Q203–205 | 8-729-671-14 | 2SC710 |
| ⇒Q206–208 | 8-729-663-47 | 2SC1364 |
| Q209 | 8-729-671-14 | 2SC710 |
| ⇒Q301, 302 | 8-729-665-47 | 2SC1362 |
| ⇒Q303–307 | 8-729-663-47 | 2SC1364 |
| ⇒Q351 | 8-729-612-77 | 2SA1027R |
| ⇒Q352 | 8-729-663-47 | 2SC1364 |
| ⇒Q353 | 8-729-316-12 | 2SC1061 |
| ⇒Q354 | 8-729-663-47 | 2SC1364 |
| Q401 | 8-724-375-01 | 2SC403C |
| ⇒Q451–454 | 8-729-663-47 | 2SC1364 |
| Q455 | 8-760-335-10 | 2SC1474 |
| Q456 | 8-760-514-10 | 2SA772 |
| ⇒Q457 | 8-729-663-47 | 2SC1364 |
| ⇒Q501 | 8-729-612-77 | 2SA1027R |
| ⇒Q551, 552 | 8-729-663-47 | 2SC1364 |

| *Ref. No.* | *Part No.* | *Description* |
|---|---|---|
| Q553 | 8-760-335-10 | 2SC1474 |
| Q554 | 8-760-514-10 | 2SA772 |
| Q601 | ⚠8-763-213-00 | 2SA861 |
| ⇒Q602 | 8-729-663-47 | 2SC1364 |
| ⇒Q651 | 8-729-316-12 | 2SC1061 |
| ⇒Q801, 802 | 8-729-663-47 | 2SC1364 |
| Q803 | 8-760-413-00 | 2SC1475 |
| ⇒Q851 | 8-729-663-47 | 2SC1364 |
| | **IC** | |
| IC851 | 8-759-157-40 | μPC574J |
| | **Diodes** | |
| D101 | 8-719-768-71 | 1S2687 |
| D102, 103 | 8-719-026-11 | 1T261 |
| ⇒D104, 105 | 8-719-422-21 | 1T22AM |
| D201 | 8-719-815-55 | 1S1555 |
| ⇒D202, 203 | 8-719-422-21 | 1T22AM |
| D301–306<br>D351, 352 | 8-719-815-55 | 1S1555 |
| D551–553 | 8-719-815-55 | 1S1555 |
| D601 | ⚠8-719-143-07 | RD4.3E-B |
| D602 | 8-719-143-07 | RD4.3E-B |
| D651 | ⚠8-719-937-10 | EQA01-10S2 |
| D652 | 8-719-143-07 | RD4.3E-B |
| D751 | 8-719-301-11 | SEL101R |
| D801–803 | 8-719-815-55 | 1S1555 |
| ⇒D804 | 8-719-320-11 | HF1A |
| ⇒D851 | 8-719-320-31 | HF1C |
| D852 | 8-719-320-11 | HF1A |
| D853 | 8-719-815-55 | 1S1555 |
| | **Miscellaneous** | |
| ⇒TH201,202<br>⇒TH351,551 | 1-800-071-XX | Thermistor, TH-350 |

- ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

## COILS

All coils are microinductors unless otherwise noted.

| *Ref. No.* | *Part No.* | *Description* |
|---|---|---|
| L101 | 1-425-632-00 | FM RF |
| L103 | 1-405-595-00 | FM OSC |
| L104 | 1-407-169-XX | 100μH |
| L105 | 1-407-182-XX | 2.2μH |
| L106 | 1-407-177-XX | 470μH |
| L107 | 1-407-178-XX | 1μH |
| L108 | 1-401-531-XX | Antenna, ferrite-rod; MW |
| L201 | 1-420-830-00 | VIF |
| L202 | 1-425-974-00 | VIF |
| L203 | 1-407-189-XX | 8.2μH |
| L204 | 1-409-179-00 | 4.5MHz Trap |
| L205 | 1-407-189-XX | 8.2μH |
| L206 | 1-407-184-XX | 3.3μH |
| L301 | 1-407-213-XX | 1.5mH |
| L351, 352 | 1-407-184-XX | 3.3μH |
| L353 | 1-407-189-XX | 8.2μH |
| L401 | 1-407-709-00 | 220μH |
| L601–603 | 1-407-172-XX | 180μH |
| L801 | 1-405-760-00 | Horizontal Oscillation, H. OSC |
| L901 | ⚠1-451-173-00 | Deflection Yoke, DY |

## TRANSFORMERS AND FILTERS

| *Ref. No.* | *Part No.* | *Description* |
|---|---|---|
| CF101,102 | 1-527-184-XX | Ceramic Filter |
| CP101 | 1-231-286-00 | Bandpass Filter |
| CP301 | 1-464-007-00 | Bias Oscillation Unit |
| FL351,352 | A-1499-084-A | Filter Ass'y, motor |
| LC201 | 1-417-060-00 | UV Separator |
| T101 | 1-403-872-00 | FM IFT |
| T102 | 1-403-952-00 | FM DISCRI |
| T103 | 1-403-953-00 | FM DISCRI |
| T104 | 1-404-041-00 | AM IFT |
| T107 | 1-405-520-00 | MW OSC |
| T108 | 1-403-165-00 | CFT |
| T201 | 1-404-118-00 | VIFT |
| T202 | 1-403-367-00 | SIFT-1 |
| T203 | 1-425-940-00 | SIFT-2 |
| T401 | ⚠1-442-757-00 | Heater, HT |
| T801 | ⚠1-453-077-00 | Flyback, FBT |

## CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics.
p : μμF, elect : electrolytic

| *Ref. No.* | *Part No.* | *Description* | | |
|---|---|---|---|---|
| C101 | 1-102-937-00 | 4p | | |
| C102–104 | 1-101-923-00 | 0.01 | | |
| C105 | 1-102-959-00 | 22p | | |
| C106 | 1-102-074-00 | 0.001 | | |
| C108, 109 | 1-101-923-00 | 0.01 | | |
| C110 | 1-102-506-00 | 7p | | |
| C111 | 1-101-576-00 | 1.5p | | |
| C112 | 1-102-504-00 | 4p | | |
| C113 | 1-102-960-00 | 24p | | |
| C114 | 1-131-402-00 | 0.1 | 16V | tantalum |
| C115 | 1-101-923-00 | 0.01 | | |
| C116 | 1-102-116-00 | 680p | | |
| C117 | 1-123-295-00 | 100 | 6.3V | elect |
| C118 | 1-101-924-00 | 0.022 | | |
| C119 | 1-101-923-00 | 0.01 | | |
| C120 | 1-101-924-00 | 0.022 | | |
| C121 | 1-121-651-00 | 10 | 16V | elect |
| C122 | 1-101-923-00 | 0.01 | | |
| C123 | 1-101-576-00 | 1.5p | | |
| C124 | 1-101-924-00 | 0.022 | | |
| C125 | 1-121-651-00 | 10 | 16V | elect |
| C126, 127 | 1-102-978-00 | 220p | | |
| C128 | 1-123-295-00 | 100 | 6.3V | elect |
| C129 | 1-101-924-00 | 0.022 | | |
| C130 | 1-161-013-00 | 0.01 | (semiconductor) | |
| C131 | 1-101-924-00 | 0.022 | | |
| C132 | 1-161-021-00 | 0.047 | (semiconductor) | |
| C133 | 1-102-973-00 | 100p | | |
| C134 | 1-161-012-00 | 0.0082 | (semiconductor) | |
| C135 | 1-101-923-00 | 0.01 | | |

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

| *Ref. No.* | *Part No.* | *Description* | | |
|---|---|---|---|---|
| C136 | 1-102-949-00 | 12p | | |
| C139 | 1-107-231-00 | 360p | | mica |
| C141 | 1-102-947-00 | 10p | | |
| C142 | 1-102-285-00 | 10p | | |
| C144–147 | 1-101-923-00 | 0.01 | | |
| C148 | 1-101-924-00 | 0.022 | | |
| C149, 150 | 1-101-923-00 | 0.01 | | |
| C151 | 1-121-402-00 | 33 | 10V | elect |
| C152 | 1-102-125-00 | 0.0047 | | |
| C201 | 1-102-942-00 | 5p | | |
| C202, 203 | 1-101-002-00 | 0.0047 | | |
| C204 | 1-101-455-00 | 0.001 | | |
| C205 | 1-101-002-00 | 0.0022 | | |
| C206 | 1-101-455-00 | 0.001 | | |
| C207 | 1-101-361-00 | 150p | | |
| C208 | 1-101-455-00 | 0.001 | | |
| C209 | 1-102-973-00 | 220p | | |
| C210 | 1-102-976-00 | 180p | | |
| C211, 212 | 1-102-947-00 | 10p | | |
| C213 | 1-102-820-00 | 330p | | |
| C214 | 1-102-807-00 | 5p | | |
| C215 | 1-108-379-00 | 0.015 | 100V | mylar |
| C216 | 1-121-726-00 | 0.47 | 50V | elect |
| C217 | 1-101-002-00 | 0.0022 | | |
| C218 | 1-123-296-00 | 220 | 6.3V | elect |
| C219 | 1-101-004-00 | 0.01 | | |
| C220 | 1-121-479-00 | 22 | 16V | elect |
| C221 | 1-101-001-00 | 0.001 | | |
| C222 | 1-121-651-00 | 10 | 16V | elect |
| C223 | 1-101-003-00 | 0.0047 | | |
| C224 | 1-121-651-00 | 10 | 16V | elect |
| C225 | 1-101-004-00 | 0.01 | | |
| C226 | 1-102-809-00 | 7p | | |
| C227 | 1-102-114-00 | 470p | | |
| C229 | 1-102-658-00 | 180p | | |
| C230, 231 | 1-102-115-00 | 560p | | |
| C232 | 1-121-651-00 | 10 | 16V | elect |
| C233 | 1-101-003-00 | 0.0047 | | |
| C234 | 1-101-004-00 | 0.01 | | |
| C235 | 1-121-392-00 | 3.3 | 25V | elect |
| C236 | 1-101-004-00 | 0.01 | | |

| *Ref. No.* | *Part No.* | *Description* | | |
|---|---|---|---|---|
| C237 | 1-121-651-00 | 10 | 16V | elect |
| C239 | 1-101-002-00 | 0.0022 | | |
| C240 | 1-102-942-00 | 5p | | |
| C242 | 1-102-889-00 | 39p | | |
| C243 | 1-101-002-00 | 0.0022 | | |
| C244 | 1-101-004-00 | 0.01 | | |
| C301, 302 | 1-121-726-00 | 0.47 | 50V | elect |
| C303 | 1-101-001-00 | 0.001 | | |
| C304 | 1-121-726-00 | 0.47 | 50V | elect |
| C305 | 1-123-307-00 | 100 | 10V | elect |
| C306 | 1-121-726-00 | 0.47 | 50V | elect |
| C307 | 1-108-365-00 | 0.001 | 100V | mylar |
| C308 | 1-101-001-00 | 0.001 | | |
| C309 | 1-131-210-00 | 0.15 | | tantalum |
| C310, 311 | 1-121-726-00 | 0.47 | 50V | elect |
| C312, 313 | 1-102-973-00 | 100p | | |
| C314 | 1-121-479-00 | 22 | 16V | elect |
| C315 | 1-123-295-00 | 100 | 6.3V | elect |
| C316 | 1-102-973-00 | 100p | | |
| C317 | 1-121-651-00 | 10 | 16V | elect |
| C318 | 1-123-307-00 | 100 | 10V | elect |
| C319 | 1-108-379-00 | 0.015 | 100V | mylar |
| C320 | 1-108-559-00 | 0.0015 | | mylar |
| C321, 322 | 1-102-973-00 | 100p | | |
| C323, 324 | 1-121-651-00 | 10 | 16V | elect |
| C325 | 1-121-392-00 | 3.3 | 25V | elect |
| C326 | 1-102-973-00 | 100p | | |
| C327 | 1-121-651-00 | 10 | 16V | elect |
| C328 | 1-121-805-00 | 330 | 10V | elect |
| C329 | 1-121-391-00 | 1 | 50V | elect |
| C330 | 1-121-651-00 | 10 | 16V | elect |
| C331 | 1-121-391-00 | 1 | 50V | elect |
| C332 | 1-102-114-00 | 470p | | |
| C333 | 1-121-651-00 | 10 | 16V | elect |
| C335 | 1-101-003-00 | 0.0047 | | |
| C351 | 1-123-306-00 | 47 | 10V | elect |
| C352 | 1-123-309-00 | 330 | 10V | elect |
| C353 | 1-121-479-00 | 22 | 16V | elect |
| C354–356 | 1-123-306-00 | 47 | 10V | elect |
| C357 | 1-102-363-00 | 0.001 | | |

- ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- ※ : Selected to yield optimum performance.

| *Ref. No.* | *Part No.* | *Description* | | |
|---|---|---|---|---|
| C401 | 1-121-395-00 | 4.7 | 25V | elect |
| C402 | 1-102-121-00 | 0.0022 | | |
| C403 | 1-108-389-00 | 0.1 | 100V | mylar |
| C404 | 1-102-978-00 | 220p | | |
| C451 | 1-108-375-00 | 0.0068 | 100V | mylar |
| C453 | 1-121-450-00 | 2.2 | 50V | elect |
| C454 | 1-123-295-00 | 100 | 6.3V | elect |
| ⇒C455 | 1-121-651-00 | 10 | 16V | elect |
| C456 | 1-121-402-00 | 33 | 10V | elect |
| C457 | 1-123-307-00 | 100 | 10V | elect |
| C458 | 1-101-004-00 | 0.01 | | |
| C459 | 1-121-391-00 | 1 | 50V | elect |
| C460 | 1-101-004-00 | 0.01 | | |
| C461 | 1-121-424-00 | 470 | 6.3V | elect |
| C462, 463 | 1-101-001-00 | 0.001 | | |
| C464 | 1-121-352-00 | 47 | 10V | elect |
| C466 | 1-101-003-00 | 0.0047 | | |
| C501 | 1-108-383-00 | 0.033 | 100V | mylar |
| C502 | 1-121-391-00 | 1 | 50V | elect |
| C551, 552 | 1-108-387-00 | 0.068 | 100V | mylar |
| C553 | 1-108-379-00 | 0.015 | 100V | mylar |
| C554 | 1-108-383-00 | 0.033 | 100V | mylar |
| C555 | 1-108-385-00 | 0.047 | 100V | mylar |
| C556 | 1-131-199-00 | 10 | 16V | tantalum |
| C557, 558 | 1-121-402-00 | 33 | 10V | elect |
| C559 | 1-121-395-00 | 4.7 | 25V | elect |
| C560 | 1-123-299-00 | 1000 | 6.3V | elect |
| C561 | 1-121-424-00 | 470 | 6.3V | elect |
| C562 | 1-108-387-00 | 0.068 | 100V | mylar |
| C601 | 1-102-116-00 | 680p | | |
| C652 | 1-119-165-00 | 1000 | 25V | elect |
| C653 | 1-123-320-00 | 100 | 16V | elect |
| C751 | 1-121-391-00 | 1 | 50V | elect |
| C800 | 1-123-296-00 | 220 | 6.3V | elect |
| C801, 802 | 1-108-375-00 | 0.0068 | 100V | mylar |
| C803 | 1-121-391-00 | 1 | 50V | elect |
| C804 | 1-108-379-00 | 0.015 | 100V | mylar |
| C805 | 1-121-391-00 | 1 | 50V | elect |
| C806 | 1-108-389-00 | 0.1 | 100V | mylar |

| *Ref. No.* | *Part No.* | *Description* | | |
|---|---|---|---|---|
| C807 | 1-121-392-00 | 3.3 | 25V | elect |
| C808 | 1-108-367-00 | 0.0015 | 100V | mylar |
| C809 | 1-108-383-00 | 0.033 | 100V | mylar |
| C810 | 1-108-389-00 | 0.1 | 100V | mylar |
| C811 | 1-123-306-00 | 47 | 10V | elect |
| C812 | 1-102-978-00 | 220p | | |
| C813 | 1-121-391-00 | 1 | 50V | elect |
| C814 | 1-123-308-00 | 220 | 10V | elect |
| C815 | ⚠1-108-377-00 | 0.01 | 100V | mylar |
| ※C816 ⚠ | 1-108-369-00 | 0.0022 | 100V | mylar |
| | 1-108-371-00 | 0.0033 | | |
| | 1-108-373-00 | 0.0047 | | |
| | 1-108-375-00 | 0.0068 | | |
| | 1-108-376-00 | 0.0082 | | |
| C851 | 1-129-736-00 | 0.033 | 630V | polyethylene |
| C852 | 1-121-738-00 | 10 | 50V | elect |
| C903 | 1-101-001-00 | 0.001 | | |
| C951 | 1-101-004-00 | 0.01 | | |
| CT101–103 | | Included in CV101–104 | | |
| CT104–106 | 1-141-138-XX | 8p | | trimmer |
| CV101–104 | 1-151-239-00 | Tuning Capacitor | | |

## RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 32 for their part numbers. All variable and adjustable resistors have characteristic curve B, unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ

| | | | | |
|---|---|---|---|---|
| R361 | 1-212-368-00 | 4.7 | 1W | metal oxide (nonflammable) |
| R460 | 1-213-132-00 | 120 | 1W | metal oxide (nonflammable) |
| R566 | 1-212-371-00 | 8.2 | 1W | metal oxide (nonflammable) |
| R601 | ⚠1-246-511-00 | 39k | | |
| R602 | ⚠1-246-455-00 | 180 | | |
| R603 | ⚠1-246-483-00 | 2.7k | | |
| R604 | ⚠1-246-479-00 | 1.8k | | |
| R605 | 1-213-124-00 | 27 | 1W | metal oxide (nonflammable) |
| R651 | ⚠1-213-134-00 | 180 | 1W | metal oxide (nonflammable) |

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

| *Ref. No.* | *Part No.* | *Description* |
|---|---|---|
| R652 | 1-213-134-00 | 180 1W metal oxide (nonflammable) |
| R653 | 1-213-124-00 | 27 1W metal oxide (nonflammable) |
| R814 | 1-213-127-00 | 47 1W metal oxide (nonflammable) |
| R862 | 1-202-735-00 | 22M ½W composition |
| RV351 | 1-224-642-XX | 1k, adjustable; TAPE SPEED |
| RV401 | 1-224-897-00 | 1k, variable; CONTR |
| RV402 | 1-224-899-00 | 250k, variable; BRT |
| RV451 | 1-224-708-00 | 20k-A, variable; VOLUME |
| RV452 | 1-224-709-00 | 20k, variable; TONE |
| RV551 | 1-224-898-00 | 100k, variable; V. HOLD |
| RV552 | 1-224-645-XX | 10k, adjustable; V. SIZE |
| RV601 | ⚠1-224-642-XX | 1k, adjustable; +6V ADJ |
| RV801 | 1-224-897-00 | 1k, variable; H. HOLD |
| RV851 | 1-224-645-XX | 10k, adjustable; +25V ADJ |
| RV852 | 1-224-647-XX | 47k, adjustable; TUNING ADJ |
| RV951 | 1-222-640-00 | 100k, variable; TV TUNE |

### MISCELLANEOUS

| *Ref. No.* | *Part No.* | *Description* |
|---|---|---|
| F651 | ⚠1-532-267-XX | Fuse, 1.6A |
| F652 | ⚠1-532-267-XX | Fuse, 1.6A (US model) |
| HE | 8-658-096-02 | Head, erase; EBF5-36 |
| HRP | 8-829-336-50 | Head, record/playback; PP134-36N |
| J101 | 1-507-569-00 | Jack, EXT ANT |
| J651A–D | 1-507-586-00 | Jack, DC IN 12V/Earphone/ REMOTE/MIC |
| M | 8-834-221-01 | Motor, D-221F |
| ME901 | 1-520-315-00 | Meter, level; TUNE/LEVEL |
| MIC | 8-814-198-40 | Microphone, electret condenser; C-1004K |
| PL901 | 1-518-316-00 | Lamp, pilot |
| S101-1–9 | 1-516-071-XX | Switch, slide; RADIO BAND |
| S201-1–4 | 1-552-252-00 | Switch, rotary slide; TV BAND |
| S301-1–6 | 1-513-323-00 | Switch, slide; REC/PB |
| S451 | 4-022-614-00 | Piece, contact; AFC/LIGHT switch |
|  | 4-022-615-00 | Spring, contact; AFC/LIGHT switch |
| S601-1–6 | 1-552-251-00 | Switch, rotary-slide; POWER |
| S901 | 1-514-346-00 | Switch, leaf; tape recorder power |
| S951 | 1-552-253-00 | Switch, pushbutton; PAUSE |
| SP901 | 1-502-636-00 | Speaker, 4Ω |
| V901 | ⚠8-731-104-45 | Picture Tube, CT-556 |
|  | 1-501-072-00 | Antenna, telescopic |
|  | 1-526-148-00 | Socket, picture tube |
|  | 1-587-080-00 | Insulator |

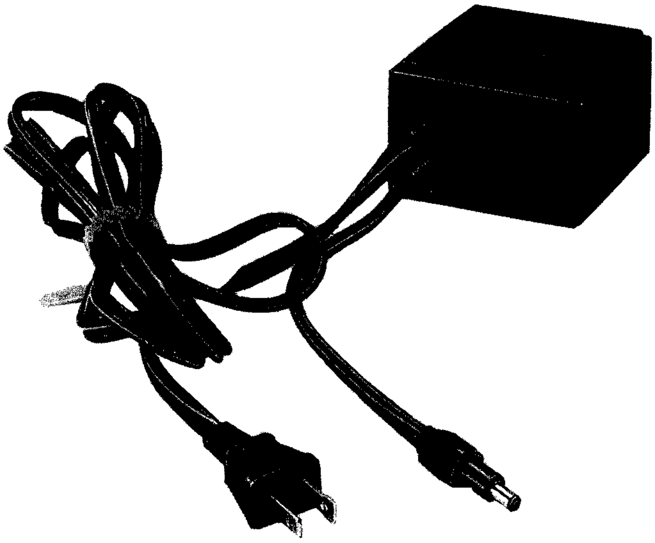
**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

## ACCESSORIES AND PACKING MATERIALS

| *Part No.* | *Description* |
|---|---|
| A-1000-471-A | AC Power Adaptor, AC-121W |
| X-3701-105-0 | Head Cleaning Tips Ass'y |
| X-4023-511-0 | Hood Ass'y |
| 1-504-059-11 | Earphone, ME-20H |
| 1-506-309-00 | Plug, shorting; SP-100 |
| 3-701-295-00 | Bag, polyethylene |
| 3-701-625-00 | Sheet, protection |
| 3-701-730-00 | Envelope, IBM card (US model) |
| 3-793-956-31 | Card, warranty (Canadian model) |
| 3-794-233-21 | Instruction (US model) |
| 4-023-458-00 | Sheet, protection |
| 4-023-567-00 | Cushion, left |
| 4-023-568-00 | Cushion, right |
| 4-023-595-00 | Sleeve, carton |
| 4-023-822-00 | Carton (US model) |
| 4-023-823-00 | Carton (Canadian model) |
| 4-495-810-31 | Manual, instruction (Canadian model) |
| 4-495-810-51 | Manual, instruction (US model) |
| 8-890-205-00 | Cassette Tape, demonstration; C-30 |

# AC-121W



## AC ADAPTOR

### SPECIFICATIONS

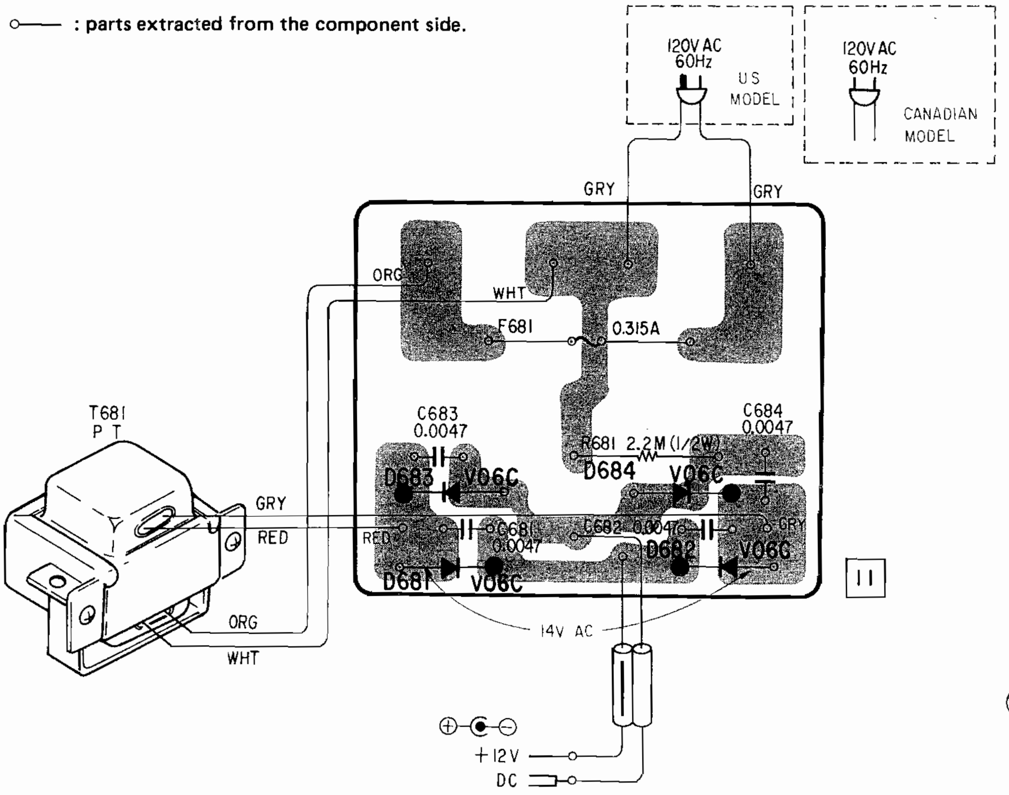
| | |
|---|---|
| **Power Requirements:** | 120 V, 60 Hz |
| **Power Consumption:** | 14.5 W ac with FX-412 operated. |
| **Dimensions:** | Approx. 78 (w) x 53 (h) x 80 (d) mm<br>3 1/16 (w) x 1/16 (h) x 3 1/8 (d) inches<br>excluding power cord and dc cord. |
| **Net Weight:** | Approx. 640 g, 23 oz (US model)<br>600 g, 21 oz (Canadian model)<br>including power cord and dc cord. |

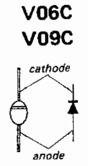
## 1. MOUNTING DIAGRAM

*– Conductor Side –*

**– F Board –**

**Note: ● ○—— :** parts extracted from the component side.


120V AC
60Hz
US MODEL
120V AC
60Hz
CANADIAN MODEL
GRY
GRY
ORG
WHT
F681
0.315A
T681
P T
C683
0.0047
C684
0.0047
R681 2.2M (1/2W)
D683
V06C
D684
V06C
GRY
RED
RED
C681
0.0047
C682 0.0047
D682
V06C
GRY
D681
V06C
II
14V AC
ORG
WHT
⊕-◐-⊖
+12V
DC


V06C
V09C
cathode
anode

## 2. SCHEMATIC DIAGRAM

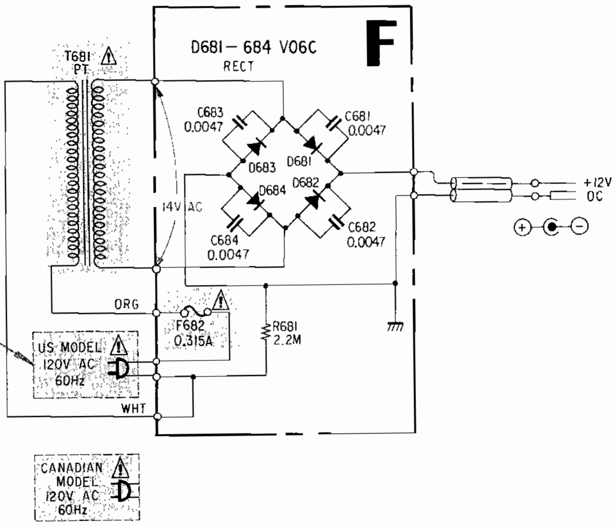
**– F Board –**

**Note:**

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000Ω; MΩ : 1000kΩ

CAUTION

This set is equipped with a polarized AC power cord plug (one blade of the plug is wider than the other).
When replacing the AC power cord, be sure to connect it with specified part number as shown in this diagram.


T681 ⚠
PT
D681– 684 V06C
RECT
F
C683
0.0047
C681
0.0047
D683
D681
D684
D682
14V AC
C684
0.0047
C682
0.0047
+12V
DC
⊕-◐-⊖
ORG
F682
0.315A
R681
2.2M
US MODEL ⚠
120V AC
60Hz
WHT
CANADIAN ⚠
MODEL
120V AC
60Hz

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

A B C D

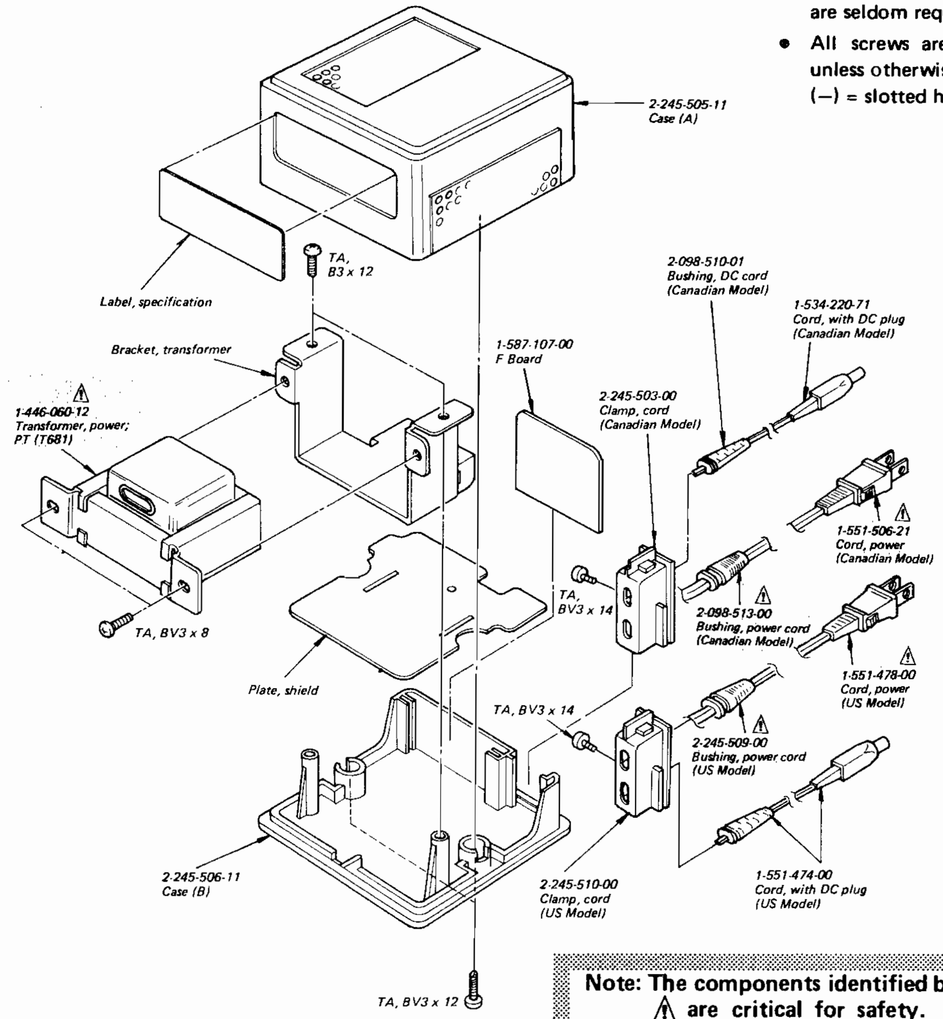
1

2

3

## 3. EXPLODED VIEW

Note:
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head


2-245-505-11
Case (A)
TA, B3 x 12
Label, specification
Bracket, transformer
⚠ 1-446-060-12
Transformer, power;
PT (T681)
TA, BV3 x 8
Plate, shield
1-587-107-00
F Board
2-098-510-01
Bushing, DC cord
(Canadian Model)
1-534-220-71
Cord, with DC plug
(Canadian Model)
2-245-503-00
Clamp, cord
(Canadian Model)
⚠ 1-551-506-21
Cord, power
(Canadian Model)
TA, BV3 x 14
⚠ 2-098-513-00
Bushing, power cord
(Canadian Model)
⚠ 1-551-478-00
Cord, power
(US Model)
TA, BV3 x 14
⚠ 2-245-509-00
Bushing, power cord
(US Model)
2-245-506-11
Case (B)
2-245-510-00
Clamp, cord
(US Model)
1-551-474-00
Cord, with DC plug
(US Model)
TA, BV3 x 12

**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.**

## 4. ELECTRICAL PARTS LIST

| *Ref. No.* | *Part No.* | *Description* | |
|---|---|---|---|
| C681–684 | 1-101-003-00 | Capacitor, ceramic; 0.0047µF | |
| ⇒ D681–684 | 8-719-900-93 | Diode, V09C | |
| F681 | ⚠1-532-400-XX | Fuse, 0.315A | |
| R681 | 1-202-723-00 | Resistor, composition; 2.2MΩ ½W | |
| T681 | ⚠1-446-060-12 | Transformer, power; PT | |
| | 1-534-220-71 | Cord with DC plug | (Canadian model) |
| | ⚠1-551-506-21 | Cord, power | |
| | 1-551-474-00 | Cord with DC plug | (US model) |
| | ⚠1-551-478-00 | Cord, power | |
| | 1-587-107-00 | F Board | |

- ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

**FX-412**
**AC-121W**

9-962-488-01

**Sony Corporation**

© 1979

79D0450-1
Printed in Japan